UNIVERSITY OF PENNSYLVANIA

THE FLORA OF BUCKS COUNTY PENNSYLVANIA

WALTER M. BENNER

A THESIS

IN BOTANY

PRESENTED TO THE FACULTY OF THE GRADUATE SCHOOL IN

PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR

THE DEGREE OF DOCTOR OF PHILOSOPHY

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TABLE OF CONTENTS

General Discussion 5
Location 5
Topography 6
Piedmont Plateau 6
Coastal Plain 8
Drainage 9
Descriptive Geology 12
Generalized Table of Geologic Formations 15
Soils 16
Summary of Soil Types 19
Climatology 20
Temperature 20
Precipitation 20
Frost Data 21
Climatological Charts 22
Floristic Discussion 25
Southern Floral Elements 25
Northern Floral Elements 27
Tidal Mud Flats 29
Coastal Plain Bogs 29
Marshes 30
Ponds 30
The Delaware Shores 30
Nockamixon 31
Durham 32
Springfield 32
Milford 33
Introduced Species 33
Forest Types 34
Botanical History 36
Localities 37
Map 40
Explanation of the Catalog 41
Acknowledgments 42
Annotated List of the Flora 43
Bibliography 313
Index 316

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THE FLORA OF BUCKS COUNTY, PENNSYLVANIA

GENERAL DISCUSSION

LOCATION

The area covered in this study is Bucks County, Pennsylvania. The County is located in the southeastern part of the State. It consists of a rectangular tract 590 square miles in extent, lying between the parallels 40°3′ and 40°37′ north latitude, and the meridians 74°44′ and 75°29′ of longitude west of Greenwich. The long side of this rectangular area is approximately 42 miles in length while it measures 20 miles in width at its widest part.

The entire County lies with its long side in a northwest-southeast direction with the western boundary running in a straight line approximately parallel to the Delaware River.

The Delaware River forms the eastern and southern boundary of the County. Montgomery County bounds it along the western border and Philadelphia County adjoins it along the extreme southwestern border. The upper tier townships of the County border on the lower portions of Lehigh and Northampton Counties.

Although the lower end of the County is in close proximity to Philadelphia and Trenton and the upper end is within easy reach of Easton and Bethlehem, the County has remained rural rather than urban in character. The largest centers of population are Bristol and Morrisville in the lower end with a population of 11,799 and 5368, respectively, Doylestown in the central part with 4577 and Quakertown in the upper end with 4883 inhabitants. The entire County had a population of 96,727 in 1930.

TOPOGRAPHY

The Atlantic border region, of which Bucks County is a part, consists of two distinct physiographic provinces—a mountain and plateau district, and a Coastal Plain. These two provinces are separated from each other by a boundary known as the "fall-line." This fall-line passes through Bucks County thus dividing the County into two regions.

The mountain and plateau district is known as the Appalachian Province which is separable into three geographic regions. The Appalachian Plateau forms the western boundary, the Greater Appalachian Valley constitutes the Central area, and the third area is termed the Piedmont Plateau. In this Plateau there are two rather distinct areas. The western edge consists of the Appalachian Mountains which bound the Greater Appalachian Valley. Stretching from these mountains the plateau proper occupies a vast rolling upland to the eastward ending with its eastern edge at the "fall-line."

Bucks County contains only the Piedmont Plateau section, in addition to the Coastal Plain, within its borders.

THE PIEDMONT PLATEAU

This Plateau constitutes the greater part of Bucks County. The eastern margin, or "fall-line" consists of a low escarpment, the base of which is marked by the 20 foot contour line which runs approximately parallel to the Delaware River about one to two miles north of the river. The Pennsylvania Railroad runs close to this line passing through Andalusia, Cornwells Station, Croydon, Bristol, Tullytown, Penn Valley and Morrisville. The top of this escarpment is approximately the 600 foot contour line.

Between the 60 and 80 foot contour lines there is a faint scarp separated by a terrace one-half mile wide. From the 80 foot contour line the gentle slope of the second terrace is maintained until a point three and one-quarter miles north of the first escarpment is reached. Here a steeper and more pronounced

escarpment occurs which is the base of the third terrace. This terrace extends from the 120 foot contour line to the 200 foot contour line, the latter line passing through Trevose and Langhorne, then eastward to a point two miles west of Morrisville, where the line turns abruptly north ending at Yardley on the Delaware River.

These three escarpments are comparatively level, when compared with the rolling country of the remainder of the Plateau. It is customary to regard the area 5 to 8 miles wide included in the southern part of the Plateau from the 200 foot contour line to the Trevose, Langhorne, Yardley line as part of the Coastal Plain. It is evident that no one "fall-line" could divide the two provinces. As a result the area from the Delaware River north to Langhorne is a zone of transition with more Coastal Plain features than Piedmont Plateau features. Recently deposited sands of Coastal Plain origin cover this area.

The rolling nature of the Plateau, with its moderate elevation ranging from the fall-line or the 20 feet contour to 400–600 feet in the northern part of Bucks County, is diversified by isolated eminences termed monadnocks. These residual hills rise from the Plateau several hundred feet. Such monadnocks are Jericho Mountain in Upper Makefield Township and Solebury Mountain in Solebury Township. In the northern section three hills resemble the Appalachian Mountains in their topography. However, these hills are not derived from the same geologic formations. These are Flint Hill (860′) of a Triassic conglomerate on the Bucks-Northampton County line in Springfield Township, Rockhill (850–880′) in East Rockhill and West Rockhill Townships from a Triassic diabase, and Haycock Mountain (960′), also of diabase, in Haycock Township.

In eastern Springfield and Durham Townships the Northampton County South Mountain occurs. The Durham Creek Valley winds through two gneiss ridges 700–800 feet high. These two ridges and the Durham Valley between represent the Southern limit of the Appalachian Mountains not to be confused with the monadnocks mentioned above.

The Plateau is dissected by relatively shallow open valleys in the upland regions, becoming more narrow and rugged as the streams reach the eastern boundary of the Plateau. If these recently formed valleys should be filled in the upland area would be converted into an elevated plain sloping east and southeast toward the Atlantic Ocean.

THE COASTAL PLAIN

As mentioned before the Coastal Plain consists of the land adjacent to the Delaware River in the southern part of Bucks County, and extending to the 20′ contour line or the "fall-line." In addition to this narrow strip one to two miles wide, the Coastal Plain deposits overlap the Piedmont formations, serving to obscure the passage from plain to plateau. This transition zone will be considered in this thesis as part of the Coastal Plain, including Bensalem, Bristol and Falls Townships and part of Middletown and Upper Makefield Township.

The Coastal Plain consists of comparatively level undiversified land. The elevation in Bucks County is from five feet at the Delaware River to twenty feet at the fall-line and two hundred feet at Langhorne if we consider the Plain to extend to the end of the transition zone. As a result of this moderate elevation the relief is inconsiderable, due to the lack of pronounced valleys. The streams in this province all flow in open valleys which lie very slightly below the surrounding divides.

DRAINAGE

The Delaware and Schuylkill Rivers receive all the drainage of Bucks County. Of these two major streams the Delaware is the more important since all but two of the lesser creeks drain into it. The Delaware River has a total length of 410 miles, of which about 70 miles forms the Eastern and Southern boundary of Bucks County. The river is navigable as far as Philadelphia and by smaller craft to Trenton where it has a mean low-water mark of 5 feet. The river is tidal to this point 130 miles north of the Delaware Capes.

On the Piedmont Plateau the Delaware flows in a southeasterly direction due to the southeasterly slope of the Plateau, and independent of the underlying geologic formations. On the Coastal Plain the river makes a sudden right angle turn parallel to the southwest strike of the underlying strata of the Coastal Plain. Throughout the Plain the Delaware flows in a former estuarine basin with its marsh and tidal flats typical of such a basin.

The Delaware River and all the other streams in this area are without natural storage reservoirs. As a result these streams are subject to considerable seasonal fluctuation in volume. Floods are rather common due to unusually heavy rainfall or due to rainfall on frozen ground.

Those streams which drain the Coastal Plain area of Bucks County are the Poquessing, Neshaminy, Mill, Common and Scott Creeks. Of these the Neshaminy is the largest and most important. In fact the Neshaminy drains the largest watershed in the County, a total drainage area of more than 193 square miles, with a length from source to mouth of 27 miles and a fall of 600 feet. This fall gives the stream good corrosive power and the creek has cut a valley of 160 feet deep in the hard shale rocks of the Plateau to a maximum width of three-eighths of a mile. The average of daily flow is 157,600,000 gallons with a maximum daily flow of 3,700,000,000 gallons and with a minimum daily flow of 2,800,000 gallons.*

* Page 24—Trenton Folio, U. S. Geological Survey (1909).

The main stream of the Neshaminy flows roughly parallel to the Delaware River through the lower half of Bucks County dividing that part of the County into two approximately equal parts. The source of the Neshaminy is in Montgomery County, a short distance west of the Bucks County line and the stream enters the County in New Britain Township. The Little Neshaminy Creek, a tributary to the main stream, rises in Montgomery County and enters Bucks County in Warrington Township draining portions of Warrington, Warminster, Warwick and Northampton Townships. Pine Run and the North Branch of the Neshaminy rise in Plumstead Township and flow west to join the main stream near Chalfont, in New Britain Township.

Because of the reduction of the ground storage of water due to the destruction of forests, the Neshaminy is subject to seasonal freshets. Woodland is found only on the steeper banks of the stream, nearly 95 per cent of the land drained by the stream being in cultivated land. The stream becomes swollen, and the water, representing the run-off drainage, becomes a yellow color, typical of streams in this region. The lack of ground storage accelerates evaporation. The soil exposed to the sun is parched by evaporation, and the level of the ground water falls below the surface springs. The springs dry up and the streams are reduced.

Due to lack of ground storage, excessive evaporation, and plant growth the streams of this area flow equal to the precipitation on their basins in December to May. From June to October the flow is lowest in proportion to rainfall on the basins.

Other main tributaries of the Delaware draining the Piedmont Plateau of Bucks County are the Tohickon, Tinicum, and Durham Creeks. These streams drain the northern section of the County. The Tohickon is the largest of the three streams, forming a system of drainage next in size to the Neshaminy Creek. Haycock Run, Deep Run, Deer Run, Wolf Run, Three Mile Run, and Morgan Run drain a large part of the upper districts.

Durham Creek drains the eastern part of Springfield Township and practically all of Durham Township.

This stream flows from its source in Springfield Township through a limestone valley between two ridges of gneiss. Since the limestone is more soluble, the stream has followed this limestone having cut a small valley between the two more resistant ridges.

The townships bordering the Delaware River on the Piedmont Plateau are drained locally by numerous small streams from one to five miles long. Many of these creeks serve only to draw off the surface water and as a result flow only periodically during the spring and early summer months.

The northwestern section of Bucks County is drained by the North East Branch of the Perkiomen Creek and East Swamp Creek, both of which are tributaries of the Perkiomen which empties into the Schuylkill River. Milford, West Rockhill, and Hilltown Townships of Bucks County form part of the Perkiomen watershed which is 447.59 square miles in extent. Most of this watershed is west of Bucks County in Montgomery County.

Bucks County is a well drained area due to the many tributaries of the Delaware River which flow through the region. There is no swampy land of any size within the County, except the region in the Coastal Plain adjoining the Delaware where tidal meadows and some river mud occur.

There are also sizable stretches of poorly drained ground between Rockhill Station and Quakertown.

Since Bucks County was unglaciated there are no natural ponds in the Piedmont area.

One of the most remarkable springs in the state of Pennsylvania is found three miles southwest of New Hope in Solebury Township. This spring is called Ingham's Spring. This is a fissure spring flowing from a definite fault in the surrounding Shenandoah limestone and the Brunswick shale near-by. The spring is 40 yards wide and the surrounding land rises 40 feet above the water-level. In Colonial times several mills operated with the flow of the water. Other lesser springs form many small brooks throughout the County which are tributary to the larger streams.

DESCRIPTIVE GEOLOGY OF BUCKS COUNTY

Numerous geologic formations occur within the 42 mile length of Bucks County. In a general way the County reaches from the Pre-Cambrian Gneiss ridges of the Appalachian Mountains in the north-east to the Pleistocene and recent formations of the Coastal Plain in the south. Between these two boundaries lies a 33 mile streach of Triassic sandstone and shale separated from the Coastal Plain deposits, in the extreme south, by a Pre-Cambrian and Cambrian ridge several miles wide.

The Coastal Plain deposits extend from the Delaware River north approximately to the 200 foot contour line running through Trevose, Langhorne and Yardley. The geologic structure of the Coastal Plain deposits is very simple. Upon a floor of Wissahickon mica-gneiss of Pre-Cambrian age have been deposited overlapping beds of unconsolidated boulders, pebbles, sand, and clay. These Pleistocene deposits range from 3 feet in depth to more than a hundred feet along the Delaware River. Mud of recent time borders the river on the south.

The Coastal Plain proper, namely from the Delaware River north to the 20 foot contour line, is composed of two distinct formations—the Cape May Formation, and mud recently deposited.

The mud or alluvium consists of sediment brought down from the upper reaches of the Delaware and its tributaries, deposited by the river during flood periods. These areas of mud are in a swampy condition and they are subject to tidal action. This mud is found at the mouth of the Poquessing Creek; along the river from the mouth of the Neshaminy Creek to Bristol, and in the region about Tullytown and the Common and Scotts' Creeks.

The Cape May Formation was deposited in late Pleistocene times when the Delaware River flooded the southern end of Bucks County forming an estuary of the sea. Gravel, sand, and clay with a few ice-borne boulders comprise this formation. This deposit covers the low terraces (to 60 feet) along the Dela-

ware extending above the 20 foot contour line limit of the true Coastal Plain for several miles.

The southern end of the Piedmont Plateau from the "fall-line" north to Langhorne and Yardley, is obscured by the deposits of Coastal Plain formations. The low terraces are covered by the Cape May Formation. The terraces between the 60 foot and the 200 foot contours are covered by the Pensauken Formation. The Pensauken Formation of early Pleistocene age is composed of gravel, sand, and ice-borne boulders usually more coarse than the more recent Cape May Formation. Along the northern edge of the Pensauken Formation, where the Wissahickon gneiss is scarcely covered by the sand and gravel or clay, the corrosive action of the streams has eroded the recent deposits, leaving the streams flowing in beds of exposed Wissahickon gneiss.

A pronounced fault occurs along the line between Trevose, Langhorne and Yardley. Bordering this fault on the north, a strip three-eighths mile wide of Chickies Quartzite separates the Wissahickon mica-gneiss on the south from the Baltimore gneiss on the north. The Chickies Quartzite consists of a greenish quartz rock easily distinguished from the micaceous gneiss and the Baltimore gneiss which the quartzite separates.

The Baltimore gneiss with instrusive gabbro and granite of igneous origin extends as a strip 2 miles wide across the County from the Chickies Quartzite north, where Triassic sandstone and shale deposits have covered the gneiss. The eastern edge of the quartzite and gneiss are concealed by deposits of the Pensauken Formation.

One mile southeast of Holland in Northampton and Southampton Townships, an isolated area of crystalline limestone occurs. This formation is called the Franklin limestone and this area is the only place where limestone of Pre-Cambrian age exists in Bucks County.

Shenandoah Limestone is present in two places in Bucks County. This limestone is of Cambro-Ordovician age. One limestone belt two miles wide and ten miles long occurs in Solebury and Buckingham Townships. This limestone was exposed

by a N. E.-S. W. fault which developed after the Triassic rocks had been deposited on the limestone. The other Shenandoah limestone area is present in Durham and Springfield Townships. The Durham Creek flows on this formation. This Durham valley several hundred feet below the surrounding ridges is typical of the region to the north of Bucks County where the Appalachian Mountain region lies.

The Triassic* of the region can be divided into three formations, which from the base upward are; the Stockton (Norristown) arkosic sandstone and conglomerate which outcrops toward the southern edge of the belt; the Lockatong (Gwynedd) dark shale and the Brunswick red shale and conglomerate which lies against the older rocks at the northern edge, such contacts being exposed at Monroe and near Springtown.

Intrusions of trap rock or diabase are present in a number of places. This trap rock is of igneous origin and was poured out millions of years later than the old Pre-Cambrian gneisses.

One area of diabase enters the County in Southampton Township. Jericho Mountain in Upper Makefield Township, is composed of diabase as are several lesser areas in Solebury Township. Large areas of trap rock are found in Milford, Richland, West Rockhill and East Rockhill Townships.

Haycock Mountain, 960 feet high, in Haycock Township, is composed of diabase which has resisted erosion and as a result rises 400 feet above the surrounding contemporaneous Triassic shales. The Ringing Rocks and Kauffman's Hill in Bridgeton and Nockamixon Townships are similar areas.

In the townships of Durham and Springfield in northeastern Bucks County Pre-Cambrian gneiss and Hardyston Quartzite of Cambrian age are present. These two old formations are identical with those which make up the Appalachian Mountains in Lehigh and Northampton Counties.

* See Wherry, Proc. Acad. Nat. Sci., Phila., 114–116 (1913).

GENERALIZED TABLE OF GEOLOGIC FORMATIONS OF BUCKS COUNTY

Age	Formations	Kinds of Rocks	Types of Soils
Quarternary Recent	Mud	Alluvium along streams	Wheeling (in part) Meadow
Pleistocene	Cape May	Sand,loam, gravel, ice-borne boulders	Sassafras Wheeling (in part) Trenton gravel
	Pensauken	Sand, loam, pebbles, and ice-borne boulders	Sassafras
	Coastal Plain		
	Diabase (Trap)	Igneous	Chester
	Brunswick	Soft red shale, and red sandstone in local deposits	Penn.
Triassic	Lockatong	Dark colored argillite and fine-grained sandstone. Some red shale	Lansdale
	Stockton	Gray, yellowish, or red-brown sandstone. Some red shale	Lansdale
Ordovician Cambro-	Shenandoah Limestone	Crystalline, siliaceous, magnesian. Blue limestone. (Dolomitic)	Hagerstown
Cambrian	Chickies Quartzite-	Greenish Quartzite	Chester
	Hardystone Quartzite-	Local Quartz conglomerate and sandstone	DeKalb
	Franklin Limestone	White Crystalline Limestone	———
Pre-Cambrian	Wissahickon mica gneiss	Micaceous gneiss. (with intrusive) (Gabbro) (Igneous)	Chester
	Baltimore gneiss	Gneiss with intrusive granite and gabbro. (Igneous)	Chester
		Banded quartz-feldspar	Chester
	Piedmont Plateau		

THE SOILS OF BUCKS COUNTY

The soils derived from the Coastal Plain deposits are classed as the Sassafras type.* The Sassafras type of soil is derived from the weathering of the unconsolidated Cape May and Pensauken Formations of Pleistocene age. In Bucks County the Sassafras soil extends in a band 5 to 8 miles wide bordering the Delaware River and passing through Bensalem, Bristol and Falls Townships and also the southern end of Lower Makefield and Middletown Townships. The soil mass has considerable depth except along the northern edge of the area where the micaceous rocks are covered by but 2 to 3 feet of soil. The Sassafras soils lie below the 200 foot contour line, and occupy the Coastal Plain and the first three terraces of the Piedmont Plateau. As a rule the soils occupy a gently rolling topography, except where the streams have cut steep slopes in the unconsolidated top soil revealing the gneiss rock which lies deep beneath practically all the Sassafras soil in Bucks County.

Four types of Sassafras soils occur in our area—the fine sand, fine sandy loam, the sandy loam and the silt loam. The fine sandy loam and the silt loam are usually poorly drained, whereas the fine sand and the sandy loam are readily permeable to water.

The soil known as the Meadow type occurs in the County. This meadowland is derived from mud of recent time. This alluvium occurs along the streams in the Coastal Plain section of the County bordering the streams and the Delaware River. Meadowland is tidal in this County.

Most of the remaining soil-types fall under the head of Upland Residual soils. These soils are formed as a result of the weathering of the igneous, metamorphic and sedimentary rocks. The Chester type of soil is the result of the weathering of the granite, gneiss and associated intrusive rocks. The Chester soil

* The names for the soil types are based on the "Reconnaissance Soil Survey of Southeastern Pennsylvania" and are not to be confused with the geologic terms.

occurs in a band from Langhorne west to the County line (4 miles wide), in Solebury and Upper Makefield Townships (Trap eminences), Haycock Township (trap of Haycock Mountain), and in Bridgeton, Nockamixon, Durham, East Rockhill, West Rockhill, Milford and Richland Townships.

The Chester area at Langhorne is of a loam type with stony loam on the steeper slopes. The remainder of the Chester series is found on ridges and steep slopes with much rough stony land.

To the north of the Chester area at Langhorne the Penn and Lansdale soils occur resulting from the weathering of the shale and sandstone (sedimentary) laid down in Triassic time.

The Lansdale soil forms about one half of the soil of the County. This type represents all the brownish and yellowish soils. The Lansdale soil is primarily a silt loam in Bucks County, except in the northern section where stony loam occurs. The surface soil is a brown to grayish color 6 to 12 inches in depth resting upon a clay loam subsoil. The Lansdale soil covers the area from Langhorne and Yardley north to Tinicum, Bedminster, and Hilltown Townships.

Across these townships a three mile band of Penn soil extends. The Penn soils are closely related to the Lansdale series in origin and topographic position. The main difference lies in the Indian red color of the Penn soils as opposed to the yellow to brown color of the Lansdale series. Other Penn soils occur near New Hope and in Buckingham Township. Due to the close relationship of Penn and Lansdale small areas of Penn occur scattered through the Lansdale area. The Penn soils in Bucks County consist of the loam and silt loam soils with some shale loam in the north. The loam type consists of 10 inches of red to brown loam resting on Indian red clay or heavy loam subsoil. The silt loam is 8–12 inches deep of a red color grading into an Indian red silty clay loam subsoil. The Penn soils are as a rule better drained than the Lansdale soils.

Another upland residual soil occurring in Bucks County is called the DeKalb soil. This soil is the result of the weathering of sandstone of Cambrian age. The DeKalb soil occurs on the South side of the Northampton South Mountain and on the ridges and slopes of the ridges in the northern section of the

County. Buckingham Mountain in Buckingham Township is the only area of DeKalb soil in southern Bucks County. Much of this part of the DeKalb soil is stony, especially on the ridges. A gray to brown clay loam covers the more sloping parts.

The Hagerstown soil results from the disintegration of the Shenandoah limestone. This upland soil type is found in only two sections of the County. One area runs through Buckingham and Solebury Townships in a narrow strip two miles wide. The soil is a reddish yellow or yellow color with a subsoil of yellow or red hue. The other limestone soil area is found in Durham and Springfield Townships.

In addition to the Coastal Plain soils and the upland residual soils there is a soil type known as the Terrace soil. The name Wheeling has been given this soil. The Wheeling soil borders the Delaware River from Morrisville to Kintnersville. The soil represents the accumulation of glacial débris derived from Recent Age and a small amount of the Cape May Formation of Pleistocene Age. This soil is the result of the Delaware having flowed at a higher level in the past. The soil is sandy for the most part, with a fine sandy loam and is of a yellowish or brown color with a lighter colored subsoil.

The type of soil known as Colluvial is also found in Bucks County. This soil has been termed the Lickdale soil. The Lickdale soil is the result of colluvial wash from the sandstone ridges of the southern extremities of the Appalachian Mountains. The soil occupies level or sloping land at the base of prominent ridges. The surface soil is gray and the subsoil is gray or mottled gray and yellow. The soils are poorly drained and are not used for cultivation. A small area occurs near Quakertown, in Richland Township, and another in Milford Township, in the vicinity of Brick Tavern.

SUMMARY OF SOIL TYPES OF BUCKS COUNTY

Soil Types	*Localities Where Found*
	(1) Coastal Plain Soils
Meadow	Borders the Delaware in southern part of county.
Sassafras	5–8 mile strip from Yardley, Langhorne, Trevose line south to Delaware River.
	(2) Upland Residual Soil
Penn	Small areas in Upper Makefield, Solebury, Buckingham Townships. Band 4 miles wide across Tinicum, Bedminster, Hilltown Townships. Scattered across upper Bucks in association with Lansdale, Chester, DeKalb soils.
Lansdale	Covers one-half of Bucks County, from northern boundary of Sassafras to band of Penn soil across Tinicum, Bedminster, Hilltown Townships. Scattered across upper Bucks in association with Penn, Chester, DeKalb soils.
Hagerstown	Occurs in two areas— Through center of Solebury-Buckingham Townships. Second through Durham—and eastern part of Springfield Townships. Each about two miles wide.
DeKalb	Small area near Buckingham. Scattered across upper Bucks in association with Lansdale, Penn, and Chester soils.
Chester	Wide strip from Langhorne to western boundary of Bucks County. Small areas in Makefield and Solebury Townships. Scattered across upper Bucks in association with Lansdale, Penn, DeKalb soils.
	(3) Terrace Soils
Wheeling	Narrow strip bordering Delaware River from Morrisville to Kintnersville.
	(4) Colluvial Soils
Lickdale	One near Quakertown; another area near Brick Tavern.

CLIMATOLOGY

A. TEMPERATURE

The Bucks County area has a somewhat "marine" type of climate so named because the effects of the Atlantic Ocean are felt upon the district. Further inland, in central and northeastern Pennsylvania, the mountains become more important climatic factors, creating a wider range of temperature than is found in Bucks County.

The summer mean, for the months of June, July and August, in Bucks County is about 70° F., and the winter mean, for December, January and February, is about 30° F. The mean temperature for the year is about 50° F. The mean maximum temperature for the year at Quakertown is 61.5° F. The mean minimum temperature for the same station is 39.9° F. Temperatures of 100° or more are rare, but the relatively high humidity often makes the heat oppressive, 105° F. at Quakertown being the highest temperature recorded at that station to 1920. During these hot periods the winds are light, bringing little relief. Usually these hot periods are not protracted, for strong northeast winds generally dispel the heat. These N.E. winds are caused by the increased barometric pressure over New England and the adjoining Canadian regions. The temperature decrease is rapid in such cases, often being produced during the night.

The winters are mild, as a rule with less than 100 days with a minimum temperature below the freezing point. Zero temperatures are rarely reached in the southern end of the county, while the higher regions further north in the county have more frequent zero or sub-zero weather.

The prevailing winds are westerly. From October to April inclusive the prevailing winds come from the northwest quarter, while from May to September inclusive the winds are usually from the southwest.

B. PRECIPITATION

The average precipitation for Bucks County is approximately 46 inches for the year, varying from 41.84 inches at George

School to 49.22 inches at Doylestown. This rain and snow is well distributed throughout the year with the minimum average monthly amount of 3.28 inches occurring in November, and the maximum average monthly amount of 4.81 inches for August.

The monthly precipitation is greatest for the months of May, June, July and August, coming at a time when the plants can best utilize the water for their development. During these months short droughts may occur, which are broken by sudden and hard rains, so that the monthly precipitation may fall in one or two heavy rains. These rains, often torrential in nature, cause severe erosion in the more hilly northern areas of the County. The Quakertown station records 109 days as the number of the days with 0.01 inch or more of precipitation. This rainfall was most common during March, June and July.

The average total annual snow-fall for Bucks County is 37 inches. Most snow falls in the months of January, February and March. The snow which falls in April and November rarely remains on the ground for any length of time. As a rule, the County is never covered with a blanket of snow throughout the winter season.

C. FROST DATA

The growing season is long, at Quakertown with an elevation of 490 feet, consisting of 162.13 days. The George School station, 190 feet in elevation, reports 170.42 days for the extent of the growing season. The average date for the last killing frost of spring at Quakertown is April 30. The average date for the first killing frost of autumn is October 15.*

In conclusion, the mild and rather uniform winter, the ample and regular precipitation, and the long growing seasons are factors which affect profoundly the flora of Bucks County.

* Latest date of killing frost at Quakertown is May 5. Earliest date of killing frost at Quakertown is October 1.

CHART SHOWING MEAN MONTHLY, AVERAGE MONTHLY, AND AVERAGE ANNUAL PRECIPITATION FOR SEVEN STATIONS IN BUCKS COUNTY, PENNSYLVANIA (IN INCHES AND HUNDREDTHS)

Stations	No. yrs. cov.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Doylestown, 420 feet	29	3.66	3.86	4.07	3.98	4.01	4.00	4.86	5.53	3.95	3.98	3.30	4.02	49.22
Forks of Neshaminy, 140 feet	27	3.61	3.80	3.83	3.66	4.39	3.94	4.80	5.00	3.71	4.01	3.52	3.66	47.93
George School, 190 feet	14	3.07	3.10	3.46	3.60	3.61	3.23	4.38	4.60	3.02	3.25	2.71	3.81	41.84
Morrisville, 80 feet	54	3.45	3.21	3.47	3.72	3.86	4.03	3.97	4.38	3.14	3.23	3.36	3.52	43.34
Ottsville, 400 feet	25	3.30	3.53	3.86	3.56	4.29	3.82	4.96	4.50	4.00	3.80	3.53	3.65	46.80
Point Pleasant, 300 feet	25	3.54	3.63	3.95	3.66	4.55	3.66	4.56	5.41	4.05	4.15	3.38	3.60	48.14
Quakertown, 496 feet	33	3.49	3.76	3.71	3.23	4.02	3.66	4.82	4.29	3.66	3.37	3.16	3.54	44.71
Average monthly		3.44	3.55	3.76	3.63	4.10	3.76	4.63	4.81	3.64	3.68	3.28	3.68	45.99

AVERAGE MONTHLY AND ANNUAL SNOWFALL

Stations	No. yrs. cov.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
George School	12	6.4	8.0	7.5	2.6	0	0	0	0	0	0	2.1	6.3	32.9
Quakertown	20	10.7	10.0	8.3	1.8	0	0	0	0	0	0	2.1	6.3	39.1

Average Number of Days With 0.01 Inch or More Precipitation

Stations	No. yrs. cov.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
Quakertown	11	10	8	11	9	9	11	12	9	7	7	7	9	109

Mean Temperature

George School	12	30.8	29.7	39.2	50.1	61.0	67.7	73.6	71.4	64.9	54.9	42.6	32.3	51.0
Quakertown	32	27.0	28.2	36.3	48.4	59.6	68.2	72.5	67.2	63.6	52.1	41.0	31.1	49.6

Mean Maximum and Minimum Temperatures °F.

Quakertown, maximum	13	35.0	36.4	49.3	61.1	73.1	80.9	86.0	84.2	76.7	65.6	51.2	38.9	61.5
Quakertown, minimum	13	18.7	18.5	29.6	37.2	48.6	55.7	61.9	59.9	52.6	42.8	32.5	21.6	39.9

Highest and Lowest Temperature °F.

Quakertown, highest	12	57	66	84	92	92	96	105	105	97	91	76	64	105
Quakertown, lowest	12	–13	–15	–3	15	29	39	43	42	29	22	11	–9	–15

Prevailing Wind Directions

Quakertown	16	nw.	nw.	nw.	nw.	sw.	sw.	sw.	sw.	sw.	nw.	nw.	nw.	nw.

FROST DATA

Quakertown	Length of record (years)	Average date of last killing frost in spring	Average date of first killing frost in autumn	Latest date of killing frost in spring	Earliest date of killing frost in autumn
	24	April 30	October 15	May 5	October 1

LENGTH OF GROWING SEASON—LAST KILLING FROST TO FIRST KILLING FROST

Stations	Length of record (years)	Length of growing season
George School	14	170.42
Quakertown	23	162.13

FLORISTIC DISCUSSION

Bucks County is one of the three original counties in Pennsylvania and parts of it have been under settlement for more than 250 years. The accounts left by the early explorers and settlers all mention the forests which covered practically all of the County. One explorer Campanius, a Swede, visited the Falls of the Delaware near the present site of Morrisville in 1642 and wrote about the great abundance there of walnuts, chestnuts, plums, mulberries and grapes. Frequent reference is also made to giant forest trees. One of these was a giant ash tree which stood in Bristol Township until recent times and was reputed to be the oldest ash tree in the County. It is said to have been twenty feet in circumference and to have yielded ten cords of wood.

This early picture of the area has become much altered as the number of inhabitants has increased and today we find that 91% of the land in the County is laid out in farms and 84.5% is in improved farm land. Most of the land not laid out in farms is found in the upper districts. In the middle and lower districts the unimproved land is found in a few isolated places, such as Jericho Hill and Buckingham Mountain. There are also fringes of unimproved land found locally along most of the larger streams. In view of these conditions it is perhaps surprising to know that so much of the native flora still persists.

For purposes of classification the County may be divided into two general regions, the Coastal Plain and the Piedmont Plateau. The former corresponds in a general way to the Upper Austral or Carolinian Zone and the latter to the Transition Zone.

SOUTHERN FLORAL ELEMENTS

The Coastal Plain has a considerable southern floral element which gains its entrance northward into this area along the Delaware River. Most of the plants do not occur above the fall-line. In some cases, however, they have migrated upward along the Delaware River and its tributaries for a short distance above that line.

The following are some noteworthy examples of southern plants which occur on our Coastal Plain. Most of these are at or near the northern limits of their range:

Woodwardia areolata
Woodwardia virginica
Lycopodium palmatum
Lycopodium adpressum
Sagittaria subulata
Erianthus saccharoides
Andropogon glomeratus
Zizania aquatica
Cenchrus pauciflorus
Paspalum setaceum
Paspalum longipilum
Glyceria pallida
Panicum lucidum
Panicum verrucosum
Panicum virgatum
Eleocharis diandra
Scirpus eriophorum
Eriophorum virginicum
Scleria setacea
Carex Longii
Carex alata
Carex caroliniana
Carex bullata
Xyris caroliniana
Xyris torta
Luzula campestris, var. *bulbosa*
Lilium superbum
Smilax glauca
Sisyrinchium atlanticum
Sisyrinchium arenicola
Spiranthes Beckii
Quercus phellos
Phoradendron flavescens
Magnolia virginiana
Drosera longifolia
Liquidambar Styraciflua
Amelanchier oblongifolia
Prunus maritima
Rubus cuneifolius
Lespedeza angustifolia
Strophostyles helvola
Polygala Nuttallii
Polygala cruciata
Euphorbia Ipecacuanhae
Ilex opaca
Ilex glabra
Ilex laevigata
Acer rubrum, var. *tridens*
Hibiscus Moscheutos
Ascyrum hypericoides
Ascyrum stans
Hypericum denticulatum
Helianthemum propinquum
Lechea maritima
Viola Brittoniana
Decodon verticillatus
Rhexia mariana
Rotala ramosior
Ludvigia sphaerocarpa
Proserpinaca pectinata
Ptilimnium capillaceum
Clethra alnifolia
Leucothoe racemosa
Sabatia stellaris
Sabatia gracilis
Gentiana Saponaria
Bartonia paniculata
Asclepias rubra
Limosella subulata
Utricularia inflata
Utricularia radiata
Utricularia gibba
Utricularia fibrosa
Viburnum nudum
Lobelia Nuttallii
Eupatorium purpureum
Eupatorium leucolepis
Eupatorium hyssopifolium
Eupatorium verbenaefolium
Eupatorium pubescens
Aster novi-belgii
Coreopsis rosea
Bidens trichosperma
Helianthus angustifolius

Other plants of southern affinities found in our flora are also at or near their northern limits with us but are not restricted to the Coastal Plain. Some may prefer the Coastal Plain deposits as a habitat but are not so sharply restricted in their distribution

by the fall-line as are the plants in the preceding list. Some of these plants occur as far north as New York or southwestern New England but they are always found in increasing numbers southward from our area. The following list gives examples of these southern affinities in our area:

Pinus virginiana
Sagittaria longirostra
Sagittaria latifolia, var. *pubescens*
Panicum anceps
Panicum longiligulatum
Panicum polyanthes
Paspalum laeve
Poa cuspidata
Cyperus lancastriensis
Rynchospora Smallii
Rynchospora cymosa
Scirpus Smithii
Scleria pauciflora
Fimbristylis mucronulata
Juncus dichotomus
Amianthium muscaetoxicum
Iris prismatica
Habenaria cristata
Myrica caroliniensis
Stellaria pubera
Quercus marylandica
Nymphozanthus advena
Liriodendron Tulipifera
Asimina triloba
Corydalis flavula
Cardamine rotundifolia
Dentaria heterophylla
Hydrangea arborescens
Gillenia trifoliata
Pyrus arbutifolia
Prunus americana
Cercis canadensis
Stylosanthes biflora
Desmodium laevigatum
Strophostyles umbellata
Ptelea trifoliata
Euphorbia corollata
Evonymus americanus
Hypericum gymnanthum
Hypericum adpressum
Ascyrum gymnanthum
Lechea racemulosa
Viola hirsutula
Rhexia mariana
Oenothera laciniata
Chaerophyllum procumbens
Thaspium trifoliatum
Oxypolis rigidior
Sabatia angularis
Polemonium reptans
Phlox subulata
Mertensia virginica
Diospyros virginiana
Fraxinus biltmoreana
Sabatia angularis
Cynoglossum virginianum
Salvia lyrata
Hemianthus micranthus
Buchnera americana
Melampyrum latifolium
Viburnum scabrellum
Lobelia nuttallii
Lactuca villosa
Lactuca floridana
Hieracium marianum
Chrysopsis mariana

NORTHERN FLORAL ELEMENTS

The Piedmont region has a much larger proportion of a northern floral element although it is not without a southern element. Some of these northern species have been brought down by the Delaware River which at one time was a much larger stream than it is today and was an outlet for the waters of the melting glacier to the north. Others probably migrated southward before the advancing ice masses and survived in this climate after the retreat of the glacier.

Included in this northern floral element are the following species, some of which are also found below the fall-line:

Thelypteris Goldiana
Thelypteris cristata
Osmunda Claytoniana
Botrychium tenebrosum
Botrychium ramosum
Isoetes Dodgei
Glyceria canadensis
Glyceria grandis
Calamagrostis canadensis
Bromus Kalmii
Spartina Michauxiana
Phalaris arundinacea
Oryzopsis racemosa
Muhlenbergia racemosa
Muhlenbergia foliosa
Muhlenbergia tenuiflora
Carex cephaloidea
Carex conjuncta
Carex canescens
Carex sterilis
Carex angustior
Carex cristatella
Carex Jamesii
Carex leptalea
Carex nigro-marginata
Carex pennsylvanica
Carex albicans
Carex hirtifolia
Carex platyphylla
Carex albursina
Carex blanda
Carex Shriveri
Carex oligocarpa
Carex Hitchcockiana
Carex conoidea
Carex glaucodea
Carex prasina
Carex flexuosa
Carex lanuginosa
Carex Sprengelii
Carex pallescens
Carex limosa
Carex torta
Carex Buxbaumii
Carex lacustris
Carex vesicaria
Carex lupuliformis
Carex leptonervia
Eriophorum gracile
Scirpus Smithii
Scirpus Smithii, var. *setosus*
Scirpus cyperinus, var. *pelius*
Luzula saltuensis
Allium tricoccum
Lilium philadelphicum
Smilacina stellata
Trillium cernuum
Trillium erectum
Smilax herbacea
Sisyrinchium mucronatum
Habenaria psychodes
Liparis Loeselii
Salix lucida
Salix longifolia
Salix Bebbiana
Salix discolor
Populus tremuloides
Populus grandidentata
Corylus cornuta
Betula populifolia
Quercus palustris
Quercus ilicifolia
Arenaria lateriflora
Arenaria stricta
Cerastium arvense
Nymphozanthus microphyllus
Nymphozanthus variegatus
Clematis verticillaris
Trollius laxus
Corydalis sempervirens
Corydalis flavula
Dentaria diphylla
Arabis dentata
Arabis glabra
Sedum roseum
Parnassia caroliniana
Spiraea latifolia
Spiraea tomentosa
Pyrus coronaria
Geum strictum
Potentilla pumila
Potentilla arguta
Potentilla argentea
Vitis vulpina
Geranium Robertianum
Zanthoxylum americanum
Ilex laevigata
Acer pennsylvanicum
Acer spicatum
Callitriche heterophylla
Hypericum boreale
Hypericum ellipticum
Hypericum Ascyron
Viola pallens

Viola rotundifolia
Viola canadensis
Viola rostrata
Epilobium molle
Epilobium densum
Cicuta bulbifera
Sanicula trifoliata
Pyrola elliptica
Pyrola chlorantha
Vaccinium pennsylvanicum
Trientalis borealis
Fraxinus nigra
Menyanthes trifoliata
Gentiana Andrewsii
Galium lanceolatum
Galium boreale
Diervilla Lonicera
Viburnum affine
Viburnum dentatum
Viburnum Lentago
Sambucus racemosa
Campanula rotundifolia
Eupatorium maculatum
Eupatorium sessilifolium
Solidago neglecta
Aster radula
Aster umbellatus
Aster acuminatus
Aster nemoralis
Antennaria neodioica
Antennaria fallax
Antennaria neglecta
Antennaria Parlinii
Gnaphalium uliginosum
Cirsium pumilum

TIDAL MUD FLATS

The water of the Delaware River is more or less brackish along the shores of the Coastal Plain and the shores are covered with tidal mud. Here we find a number of plants growing only in habitats of this kind. Some of them are very restricted in their distribution. Among these are the following:

Isoetes riparia—a rare species of restricted range.
Zannichellia palustris, var. *major*—widely distributed in eastern North America.
Sagittaria Eatoni—a northern species.
Sagittaria subulata—a southern species.
Scirpus Smithii—a northern and north central United States species.
Eleocharis diandra—a rare and local species.
Eleocharis olivacea—a northern species.
Eriocaulon Parkeri—rare and local.
Acnida cannabina—ranges from New England to Florida.
Tillaea aquatica—a rare and local species.
Ptilimnium capillaceum—a southern species.
Elatine americana—a northern species.
Hemianthus micranthus—a southern species.
Ilysanthes dubia, var. *inundata*—a local variety.
Ilysanthes inequalis—a southern species.
Limosella subulata—a southern species.

COASTAL PLAIN BOGS

On the Coastal Plain are found a number of bogs which cover in a few cases considerable ground. The largest of these is about a mile northwest of Bristol. Some of the plants found in these bogs are the following:

Lycopodium adpressum
Rynchospora glomerata
Scleria setacea
Carex Howeii
Carex seorsa
Habenaria clavellata
Habenaria ciliaris
Isotria verticillata
Magnolia virginiana
Drosera longifolia
Pyrus arbutifolia
Pyrus arbutifolia, var. *atropurpurea*
Amelanchier oblongifolia
Polygala cruciata
Rhus Vernix
Rhexia virginica
Rhexia mariana
Utricularia spp.

MARSHES

Extensive marshes are found in the Coastal Plain districts. Here we find, among other things, the following characteristic aquatic flora:

Zizania aquatica
Peltandra virginica
Typha spp.
Nymphozanthus advena
Bidens discoidea

PONDS

A number of curious little ponds occur in this region. Some of them have open grassy shores while others are surrounded by thickets. Some of the plants found here are:

Potamogeton pulcher
Potamogeton spp.
Glyceria acutiflora
Lemna minor
Wolffia Columbiana
Utricularia spp.

THE DELAWARE SHORES

The Delaware River Valley is without doubt the most interesting region botanically in the entire County. This is equally true of the Piedmont and Coastal Plain regions.

The river shore at many places is dotted with sand bars which gave a scant but interesting vegetation. These bars are flooded during freshets but are entirely exposed at other times. Then, too, the river is dotted with many small islands covered with a rich sandy alluvium. The shore of the river at other places in the Piedmont is gravelly rather than muddy as is the case on the Coastal Plain where there is tidal mud.

The vegetation which characterizes the river shore of the Piedmont Plateau is not a greatly varied one but is quite distinctive. The following plants, most of them of northern affinities are to be found here:

Equisetum littorale
Isoetes Dodgei
Eragrostis hypnoides
Eleocharis intermedia
Cyperus dentatus
Salix longifolia
Prunus depressa
Ptelea trifoliata
Vitis vulpina

Of these, the only ones not truly representative of northern elements are *Eragrostis hypnoides* which has a distribution extending from Canada into tropical America and westward to the Pacific Coast and *Ptelea trifoliata* a southern species found nowhere in the County except at a few stations along the Delaware River.

Among the plants found on the alluvial banks of the Delaware River are:

Elymus riparius
Elymus virginicus, var. *hirsutiglumis*
Elymus striatus
Poa cuspidata
Anemone riparia
Arabis dentata
Agrimonia striata
Impatiens aurea
Hypericum Ascyron
Ellisia Nyctelea

These are also plants of northern affinities. *Agrimonia striata* is a plant more common westward and is very rare in our area.

NOCKAMIXON

The Nockamixon Narrows located along the Delaware River between Kintnersville and Upper Black Eddy is the best known botanical station in Bucks County. It is "classic" ground to all botanists of the East. Among the earliest collectors to visit the locality and call attention to its flora was the eccentric Rafinesque. In his "Life of Travels and Researches in North America" published at Philadelphia in 1836 he writes:

"The greatest natural curiosity on the Delaware River are the Nockamixon Rocks in Pennsylvania, where they give name to a township. This ledge is nearly perpendicular, $2\frac{1}{2}$ miles long, 400 feet high. The base is red shale, or Paleopsanite, but overcapped by a brown trap. They front the south and have a level top, with only two fissures made by rains falling in cascades. The road and canal have been made by cutting and banking. The river is full of little islands. It is a beautiful and romantic place. I found here the *Adlumia* and many other rare plants."

The *Adlumia* of which he speaks seems to have become extinct in this locality although it was reported from there much more recently by the late Dr. S. P. Seese (See Bul. Torr. Bot. Club, xxxvi. 662 (1909).

It was here that Dr. Thomas C. Porter and Dr. Traill Green, of Lafayette College, discovered *Sedum roseum* on May 18, 1867. This plant is found in cool secluded spots along the ledges of rock and is a plant of the Far North, regarded as a relic of the days when the great ice cap extended down into Pennsylvania as far as Northampton County.

Here one may also find, either along the cliffs or in the alluvial soil near-by, the following plants all of northern origin:

Cystopteris bulbifera
Selaginella rupestris
Taxus canadensis
Carex plantaginea
Trillium erectum
Trillium cernuum
Arenaria stricta
Dicentra canadensis
Dentaria diphylla
Fragaria vesca, var. *americana*
Geranium Robertianum
Acer spicatum
Viola canadensis
Hydrophyllum canadense

DURHAM

The Durham region has on its outcroppings of limestone several plants not found elsewhere in the County. They are:

Pellaea atropurpurea
Asplenium Ruta-muraria
Gentiana quinquefolia

Of these the first is of wide distribution while the other two are of northern origin. It is quite evident that the flora of the Delaware Valley south to the fall-line is predominantly northern in origin and found its way along the course of the River. Below the fall-line there is a considerable southern element in the flora of the Delaware Valley due to a northern migration along the tide-water portion of the Delaware.

SPRINGFIELD

In the vicinity of Pleasant Valley and Passer in Springfield Township there are numerous cold springy or swaley strips of meadow land between the hills and occasional stretch of wet woodland on the borders of small streams. Here one finds, among others, the following species:

Thelypteris Goldiana
Botrychium tenebrosum
Lycopodium lucidulum
Panicum flexile
Muhlenbergia racemosa
Muhlenbergia foliosa
Carex interior
Carex sterilis
Carex strictior
Carex angustior
Carex gynandra
Rynchospora alba
Pogonia ophioglossoides
Calopogon pulchellus
Parnassia caroliniana
Drosera rotundifolia
Vaccinium macrocarpon
Polygala Senega
Epilobium densum

These plants are all of northern origin except *Panicum flexile, Rynchospora alba, Pogonia ophioglossioides* and *Calopogon pulchellus* which are plants of wide range.

In the wet swaley hillside gullies of Durham and Springfield Townships is found *Cardamine rotundifolia,* an Alleghanian species, and in the hills near Springtown occurs *Malaxis uniflora,* a northern species.

MILFORD

A series of swaley meadows, thickets and open woods comparable to those of Springfield Township occurs in Milford Township. The most extensive of these is near Finland where one finds:

Ophioglossum vulgatum
Botrychium ramosum
Botrychium tenebrosum
Muhlenbergia racemosa
Rynchospora alba
Scleria pauciflora
Melanthium virginicum
Pogonia ophioglossoides
Rhus Vernix
Epilobium molle
Epilobium densum
Samolus floribundus

Here again we find a number of species of northern origin. The exceptions are *Ophioglossum vulgatum, Rynchospora alba, Pogonia ophioglossoides, Rhus Vernix* and *Samolus floribundus* which are of wide range and *Scleria pauciflora* and *Melanthium virginicum* which are of southern origin.

In a swaley meadow near Milford Square occurs *Thelypteris cristata,* var. *Clintoniana,* a northern fern.

In East Rockhill Township near Rockhill Station in a small tract of wet ground occur *Carex limosa, Salix Bebbiana* and *Menyanthes trifoliata,* all of northern origin.

INTRODUCED SPECIES

The annotated list accompanying this study includes 339 introduced species. A large proportion of these are perma-

nently established as weeds mainly in agricultural districts. Some of the introduced species must be regarded as waifs or chance introductions which are hardly likely to persist. Some have appeared within our limits rarely and have been collected but once while others are met with more frequently. However, they have all been placed in their systematic position in the list and are counted as introduced species if they have been collected at all within the County limits.

FOREST TYPES

Within Bucks County it is possible to distinguish the following major forest types:

1. White Pine-Hemlock Type.
2. Oak-Hickory Type.
3. River Birch-Swamp Maple Type.
4. Sweet Gum-Willow Oak Type.

The White Pine-Hemlock Type in a few places in the upper and middle districts. An excellent example of this type of forest is found along Beaver Creek, several miles northeast of Ottsville. Here one finds the heaviest stand of White Pine in the County. Associated with these two species are *Taxus Canadensis, Pyrola chlorantha* and *Pyrola elliptica.*

In some parts of the County, notably among some of the larger streams, are found pure stands of Hemlock while in most districts the White Pine is represented only by isolated specimens.

The Oak-Hickory Type is the prevailing forest type of Bucks County. It occurs in the valleys and on the hillsides in most of our area. This type includes a greater number of forest tree species than any other forest type in the County. Here one finds the White Oak, Red Oak, Black Oak, Scarlet Oak, Pignut Hickory, Mockernut Hickory, Shagbark Hickory, Black Walnut, Sassafras, Black Birch and Tulip Poplar.

The River Birch-Swamp Maple Type is found along the Delaware River and its main tributaries. The predominating species are Silver Maple, Red Maple, Box Elder, or Ash leaved Maple, River, or Red Birch, Black Walnut, White Ash, White Oak,

Swamp White Oak, Swamp Hickory and Buttonwood, or Sycamore, Red Osier and various species of Willow. It will be noticed that this is also a predominantly hardwood type but it occurs on low-lying tracts and on flood plains of streams.

The Sweet-Gum-Willow Oak Type occurs only on the Coastal Plain strip. The characteristic trees of this type are the Willow Oak, Sweet Gum, Christmas Holly, Laurel Magnolia, and American White Birch. The shrubby plants found in this association include *Vaccinium corymbosum, Clethra alnifolia, Lyonia mariana, Pyrus arbutifolia* and *Pyrus arbutifolia,* var. *atropurpurea.* Among the climbers we find *Smilax glauca* and *Smilax rotundifolia* which in some places form an impenetrable tangle.

BOTANICAL HISTORY

Not a great deal of information is at hand concerning early botanical work in Bucks County. We are certain, almost beyond a doubt, that many of the older botanists whose works are now the classics of botanical literature, collected within the borders of the County. The Bartrams, Nuttall, Durand, Michaux, Muhlenberg, Collins, Schweinitz and others, made trips into the southern and eastern end of the County, and Rafinesque having followed the Delaware River to the upper end of the County.

The following is an extract from a letter sent by the well known Philadelphia botanist, Zaccheus Collins, to the eminent botanist Muhlenberg, dated August 23, 1813:

"I was lately in Bucks County, almost five miles northwest of Bristol, a spot very interesting to me botanically and geologically. Although my opportunity was transient from bad weather, I met with several plants for the first time, such as your Malaxis-ophioglossoides, Woodsia-onschiodes, Orchis, perhaps incisa, and here some years back I first recognized Hydropeltis purpurea, Crotonopsis-linearis, Michx., and the only Pennsylvania spot known to me of Arbutus-uva-ursi. In fine the Magnolias, the Glabrous Prinos, Ilex, etc., seemed involuntarily to transport me to Jersey."

Among the earliest collectors whose collections are quoted in this treatment are Isaac C. Martindale and Elias Diffenbach who confined their activities largely to the lower districts. About the same time the upper districts, especially those along the Delaware River, were being visited by botanists from Bethlehem and Easton. Of these Dr. Thomas C. Porter, of Lafayette College, did the most outstanding work.

The first list of plants of Bucks County was published in 1876 by Dr. Isaac S. Moyer, of Quakertown. This list contained 1,166 species and varieties. A revision of this list was published in 1905 by Dr. Clayton D. Fretz, of Sellersville. His list contained 1,581 species and varieties.

In recent years the County has been quite thoroughly explored by various collectors and there are reasons to believe that this

present catalog is a fairly complete list of the native flora of the area. Future additions to the flora will consist largely of more recent introductions. Further collecting is, however, still very desirable. It will bring out additional facts concerning the distribution, limits of range and habitat of the various species in our flora.

The present list includes 298 species and varieties not mentioned in Fretz's Flora. Some of these represent recent segregates from other species and the others represent species not known to occur in the County when Fretz prepared his list.

LOCALITIES

The following localities are quoted in the annotated list. By the index number given, their approximate location on the accompanying sketch map may be determined.

Almont. E 3.
Andalusia. J 8.
Applebachsville. D 4.
Aquetong. F 7.
Argus. D 3.
Beaver Creek—Refers here to the region one to two miles north-northeast of Ottsville. C 5.
Bedminster—Records may refer to Bedminster Township, but more frequently to Bedminsterville. D 5.
Bensalem. I 8.
Blooming Glen. E 4.
Bonair—On County line in Warminster Township. H 6.
Brick Tavern. D 3.
Bridgeton. Refers to Bridgeton Township B 6 and C 6.
Bridge Point = Edison.
Bridge Valley. G 6.
Bridgewater = Croydon.
Bristol. I 9.
Brownsburg. F 8.
Buckingham. F 6. May also refer to the Township.
Buckingham Mountain. F 7.
Buckingham Valley. F 7.
Buckmanville. F 7.
Bucksville. C 5.
Buckwampum Mountain. C 4.
Bursonville. C 4.
Bycot. F 7.
Carversville. E 6.
Center Bridge. E 7.
Chalfont. F 5.
Church Hill = Weisel.
Churchville. H 7.
Cornwells. J 8.
Croydon. J 8.
Curley Hill. E 6.
Cuttalossa Valley = near Lumberton. E 7.
Danboro. E 6.
Davisville. H 6.
Deep Run. E 5.
Derstine's, or Derstine's Station. E 3.
Dolington. G 8.
Doylestown. F 6.
Dublin. E 5.
Durham. B 5.—This refers to Durham P. O. except in the older records where it frequently refers to the Township.
Durham Furnace. B 5.
East Rockhill. Refers to the Township. E 4.
Eddington. J 8.
Edison. G 6.
Emilie. H 9.
Erwinna. G 6.
Fairmount = Passer.
Fallsington. H 9.

Farm School. F 5.
Feasterville. H 7.
Ferndale. C 5.
Finland. E 2.
Forest Grove. F 6.
Fountainville. F 5.
Fretz. D 5.
Fricks. F 4.
Furlong. F 6.
Gardenville. E 6.
George School. G 8.
Glen Lake. H 8.
Grenoble. G 7.
Hagersville. E 4.
Harrow. C 5.
Hartsville. G 6.
Haycock. Refers to the Township. C 4.
Haycock Run. C 5.
Haycock Mountain. C 4 and C 5.
Hilltown. May refer to Hilltown Township, especially in Fretz's records. May also mean Hilltown P. O. F 5.
Holicong. F 7.
Holland. H 7.
Hulmeville. I 8.
Ingham Springs. E 7. Solebury Township, near Aquetong.
Ivyland. H 6.
Jamison. G 6.
Janney. H 8.
Jericho Hill. F 8. Sometimes referred to as Jericho Mountain.
Johnsville. H 6.
Keelersville. E 4.
Kellers Church. D 4.
Kintnersville. B 5.
Kumry. E 2.
Lahaska. F 7.
Landisville. H 6.
Langhorne. H 8.
Lehnenberg = Monroe.
Leidytown. F 4.
Levin. F 8.
Line Lexington. F 4.
Lower Black Eddy = Point Pleasant.
Lumberton. E 7. A short distance below Lumberville at mouth of Cuttalossa Creek.
Lumberville. E 7.
Mechanicsville. F 6.
Milford Square. D 2.
Milford. Refers to Milford Township.
Monroe. B 5.
Morrisville. H 10.
Mount Pleasant = Hilltown P. O. F 5.
Naceville. E 3.
Narrowsville. B 6.
Neshaminy. G 5.
Neshaminy Falls. H 8.
Neshaminy Forks. G 7.
New Britain. F 5.
New Hope. E 8.
Newportville. I 9.
Newtown. G 8.
Nockamixon—Refers to Nockamixon Township, usually along the Narrows. It is therefore generally synonymous with Narrowsville but may sometimes refer to other parts of the Township. Formerly Bridgetown Township was included in Nockamixon Township.
Oakford. I 8.
Ottsville. D 5.
Oxford Valley. E 9.
Parkland. H 8.
Passer. C 3.
Penns Manor. I 10.
Penns Park. G 7.
Penn Valley. H 10.
Perkasie. E 4.
Pineville. F 7.
Pipersville. D 5.
Pleasant Hill = Pleasant Valley.
Pleasant Valley. C 4.
Plumstead. This may refer in some of the older records to Plumstead Township, but in most cases it refers to Plumsteadville. E 5.
Point Pleasant. D 6.
Quakertown. D 3.
Revere. C 5.
Richboro. H 7.
Rich Hill. E 3.
Richlandtown. D 3.
Ridge Valley = near Argus. E 3.
Riegelsville. B 5.
Ringing Rocks—In Bridgeton Township. B 6.
Rockhill—In some of the old records this may refer to East or West Rockhill Townships which were originally included in Rockhill Township. In the case of more recent records, it generally refers to Rockhill Station.

Rockhill Station. E 3.
Rocky Ridge. E 3.
Roelofs. H 9.
Rushland. G 7.
Sellersville. D 3.
Shelly. C 3.
Silverdale. E 4.
Slickville = Penns Manor.
Smoketown = Rocky Ridge.
Solebury. E 7.
Southampton. H 7.
Spinnerstown. D 9.
Springfield—Refers to Springfield Township. Most of these records are by Fretz and refer to the region near Pleasant Valley.
Springtown. B 4.
Steinsburg. D 2.
Stoopville. G 8.
Sundale. C 6.
Telford. F 3.
Thatcher. D 4.
Three Mile Run—The valley between Perkasie and Rockhill Station. E 4.
Tinicum. D 6.
Tohickon. D 5.
Tohickon Park. D 5.
Trevose. I 7.
Trumbauersville. D 3.
Tullytown. I 9.
Turkey Hill. H 10.
Uhlertown. G 6.
Upper Black Eddy. B 6.
Warminster. H 6.
Warrington. G 6.
Washington's Crossing. F 9. Now recognized as Washington Crossing by Post Office Department.
Weisel. D 4.
Wismer. E 6.
Woodbourne. H 8.
Woodside. H 9.
Wormansville. D 6.
Wrightstown. G 7.
Wycombe. F 7.
Yardley. G 9.
Zion Hill. C 3.

The islands in the Delaware River under Pennsylvania jurisdiction which are quoted in this list are given below together with their location:

Biles Island—Three miles below Morrisville, opposite Falls Township. H 10.
Hendrick's Island—Above Center Bridge. E 7.
Malta Island—One mile below New Hope Bridge. E 8.
Moon's Island—One mile below Morrisville. H 10.
Solliday's Island—One and one-half miles above Point Pleasant. D 6.
Wyker's Island—A 14-acre island near the Nockamixon "Narrows." B 5.

NORTHAMPTON
DURHAM
BRIDGETON
LEHIGH
SPRINGFIELD
NOCKAMIXON
HAYCOCK
RICHLAND
TINICUM
MILFORD
BEDMINSTER
EAST ROCKHILL
WEST ROCKHILL
DEEP RUN
PLUMSTEAD
SOLEBURY
HILLTOWN
NEW BRITAIN
DOYLESTOWN
BUCKINGHAM
WARRINGTON
WARWICK
WRIGHTS TOWN
NEWTOWN
UPPER MAKEFIELD
LOWER MAKEFIELD
WARMINSTER
NORTHAMPTON
SOUTHAMPTON
MIDDLETOWN
FALLS
BRISTOL
BENSALEM
PHILADELPHIA
MONTGOMERY
NEW JERSEY
Delaware River
SKETCH MAP of BUCKS COUNTY, PA. with all townships and principal streams

EXPLANATION OF THE CATALOG

In the Annotated List of the Vascular Plants of Bucks County, which follows, the International Rules of Botanical Nomenclature have been followed. To differentiate the various elements in the flora the names of introduced plants are preceded by an asterisk (*) and the excluded species based on discredited records taken from Fretz's Flora of Bucks County (1905) and Keller and Brown's Flora of Philadelphia and Vicinity (1905) are listed in brackets. All others are considered indigenous species.

All synonyms are italicized. As a rule synonyms are given only where the names differ from those used in Gray's Manual of Botany (Ed. 7, 1908) or where they are included for the purpose of identifying the names used in other lists. All records quoted in this list as authentic, are based on material seen by the writer in one of the several local herbaria.

The abbreviations in parenthesis following the name of each locality indicate the name of the collector and the herbarium in which the material was seen. A list of the collectors and the abbreviations employed to designate them follows in alphabetical order:

Ad	Adams, Joseph W.	G	Garber, Abraham P.
A	Allebach, Harvey G.	Gr	Gross, C. A.
Bl	Ball, Frank	Ha	Hamm, Daniel W.
Ba	Bartram, Edwin B.	Hb	Harshberger, John W.
Bt	Bassett, George W.	H	Heritage, Benjamin
B	Benner, Walter M.	J	John, Albrecht
Be	Best, George N.	K	Keller, Ida A.
Bo	Boice, C. A.	Kr	Krout, A. F. K.
Br	Brinton, J. Bernard	Le	Leeds, Arthur N.
Bn	Brown, Stewardson	Li	Lippincott, Charles A.
Ca	Canby, William M.	L	Long, Bayard
Co	Conrad, Solomon W.	M	MacElwee, Alexander
C	Crawford, Joseph	Ma	Martindale, Isaac C.
D	Diffenbaugh, Elias	Mc	McDowell, Fred
Dr	Dreisbach, Robert R.	Me	Meredith, Hugh B.
E	Eckfeldt, John W.	Mo	Moyer, Isaac S.
Fi	Fisher, Hiram L.	Mu	Mumbauer, Joseph R.
Fo	Fogg, John M.	Pe	Pennell, Francis W.
F	Fretz, Clayton D.	P	Porter, Thomas C.
Fy	Frey, Gottlieb	Po	Poyser, William A.

Pr	Pretz, Harold W.	T	Taylor, William Randolph
R	Ruth, John A., and Harvey F.	Tr	True, Rodney H.
		V	Van Pelt, Samuel S.
Sa	Saunders, C. F.	Va	Van Sant, Belle
Se	Seal, Thomas	V & L	Van Pelt, Samuel S., and Long, Bayard
Sg	St. John, Harold and Long, Bayard	Ws	Williams, I. Newlin
Si	Smith, Benjamin H.	Wi	Williams, Mary H.
Sn	Stone, Hugh E.	W	Williamson, Charles S.
St	Stone, Witmer	We	Witte, William H.
Sm	Strohm, Franklin H.		

The system employed to designate the herbarium in which the specimen was seen is the use of a dash (–) and another initial following it within the same parenthesis immediately after the abbreviation used to indicate the collector, unless the material quoted is in the herbarium of the Philadelphia Botanical Club at the Academy of Natural Sciences of Philadelphia in which case no herbarium initial is employed. For example, (P) indicates that the material quoted was collected by Thomas C. Porter and is now in the herbarium of the Philadelphia Botanical Club, and (P–C) indicates that the material collected is now in the herbarium of the Philadelphia College of Pharmacy and Science.

The following initials have been employed to designate the several herbaria consulted by the writer:

(no initial)	Philadelphia Botanical Club
(– C)	Philadelphia College of Pharmacy and Science
(– G)	George School
(– P)	University of Pennsylvania
(– R)	Herbarium of John A., and Harvey F. Ruth

Where the name of a locality is quoted in parenthesis, thus (Bristol), it indicates a previously published record for which no herbarium material could be found.

ACKNOWLEDGEMENTS

When a work of this nature is undertaken, one is obliged to look to certain persons for suggestions and inspiration as well as for help in difficult problems. The writer wishes to take this opportunity to thank the various individuals who contributed in any way toward the completion of this project.

ANNOTATED LIST OF THE VASCULAR FLORA

POLYPODIACEAE (FERN FAMILY)

Polypodium virginianum L. POLYPODY.

(*P. vulgare* of American authors.) Rhodora, xxiv. 125 (1922).

Rocky situations; not infrequent.

Revere (W); Upper Black Eddy (Bn); Uhlertown (Me); Nockamixon (Wa); Ottsville (L); Haycock Mountain (L); Rockhill (F) (K); Deep Run (L); Bycot (K); Center Bridge (L); Brownsburg (L); Newtown (W. P. Evans); Aquetong (K); New Hope (Sg).

Adiantum pedatum L. MAIDENHAIR.

Rich moist woods; rather frequent.

Narrowsville (M); Nockamixon (Po); Sundale (L); Tohickon (Me); Shelly (B); Spinnerstown (L); Rockhill (F); Argus (B); Aquetong (K); Lumberville (L); Newtown (Va–G).

Pteridium latiusculum (Desv.) Hieron. COMMON BRAKE.

Wissenschaftliche Ergebnisse der Swedischen Rhodesia-Kongo-Expedition 1911–12, i. Heft. 1; 7 (1914).

(*Pteris aquilina* of Gray's Man. ed. 7, in part).

Dry thickets and hillsides; rather frequent although not collected very frequently.

Nockamixon (L); Ringing Rocks, Bridgeton Township (L); Bycot (K); Penn Valley (C); Tullytown (F); Bristol (F).

Maxon is sometimes credited as the author of the above combination. See Am. Fern Journ. ix. 43 (1919).

Cheilanthes lanosa (Michx.) Watt. HAIRY LIP FERN.

On rocks; rare.

Nockamixon (Pr); Ottsville (L); Rushland (L); Lumberville (F); (Pipersville); (Sellersville).

Pellaea atropurpurea (L.) Link. CLIFF BRAKE.

Crevices and ledges of dry exposed limestone cliffs; local.

Nockamixon (H) (C); Riegelsville (F); Narrowsville (M); Durham Furnace (L) (F); limestone bridge wall, 1½ miles east of Springtown (We).

Pellaea glabella Mett.

Linnaea, xxxvi, 87 (1869).

Distinguished from preceding species by its smooth, lighter colored stipes and short, not more than 3–5 parted leaves; similar situations; rare.

In crevice of old stone lock wall of canal, 7/8 mile north of Riegelsville (Pr, September 1, 1919); old limestone wall, Durham Furnace (Hans Wilkins, June 9, 1929), Narrowsville (B).

Woodwardia virginica (L.) Sm. CHAIN FERN.

Low ground in Coastal Plain district; rare.

Fallsington (L); Oxford Valley (L); Bristol (D); (Tullytown).

Woodwardia areolata (L.) Moore.

Wet woods in Coastal Plain district; more common than preceding.

Yardley (L); Fallsington (L); Oxford Valley (B); Tullytown (Sa) (C); Bristol (C).

Asplenium platyneuron (L.) Oakes. EBONY SPLEENWORT.

Open or thinly wooded rocks and banks; occasional.

Nockamixon (Po); Uhlertown (Me); Haycock Mountain Mc); Sprinnerstown (B); Rockhill (F); Aquetong (K); Buckingham (E. R. Heacock); Buckmanville (L).

Asplenium Trichomanes L. MAIDEN-HAIR SPLEENWORT.

Shaded rocks and ledges; fairly common in upper half of County.

Narrowsville (Bn); Uhlertown (Me); Upper Black Eddy (Bn); Erwinna (L); Ottsville (L); Weisel (B); Sellersville (F); Chalfont (L).

Asplenium Ruta-muraria L. WALL RUE SPLEENWORT.

On limestone cliffs in northeastern part; local.

Riegelsville (F); Durham Furnace (L) (Le).

Prof. Fernald separates our American form of this fern from the Eurasian and calls it *A. cryptolepis.* Rhodora, xxx, 37 (1928).

Athyrium achrostichoides (Sw.) Diels. SILVERY SPLEENWORT.

(*Asplenium acrostichoides* Sw.) Rhodora, xxi. 178 (1919).

Rich woods; infrequent.

Nockamixon (Ba); Three Mile Run (F); Rockhill (F); Jericho Hill (L); Newton (Va–G).

Athyrium angustum (Willd.) Presl. LADY FERN.

(*Asplenium Filix-foemina* of authors.) Rhodora, xix. 169 (1917) and xxi. 178 (1919).

Low woods and bogs; infrequent.

Narrowsville (M); Rockhill (B); Sellersville (F); Aquetong (K); Yardley (Me); Fallsington (L).

According to Butters, this is the northern species. Apparently Bucks County is in the zone of transition from the northern to the southern species. The Yardley specimen quoted above approaches the southern species, *A. asplenioides* (Michx.) Desv.

Camptosorus rhizophyllus (L.) Link. WALKING FERN.

Shaded rocks; infrequent.

Nockamixon (Po) (C. E. Waters); Rockhill (M); Argus (B); Ridge Valley (F); Pipersville (F); Point Pleasant (Me); Bowman's Hill, Brownsburg (L); (Center Bridge); (Neshaminy); (Rushland).

Polystichum acrostichoides (Michx.) Schott. CHRISTMAS FERN.

Rocky or sandy woods; frequent.

Nockamixon (Po); Upper Black Eddy (Bn); Revere (L); Ottsville (L); Haycock Mountain (L); Rockhill (F); Milford Square (F); Deep Run (L); Buckmanville (L); Roelofs (L); Jamison (Dr); Tullytown (B); Andalusia (Ma).

Thelypteris* hexagonoptera (Michx.) Weatherby. BEECH FERN.

(*Phegopteris hexagonoptera* (Michx.) Fee.) Rhodora, xxi. 179 (1919).

Damp to rather dry open woods; frequent.

Nockamixon (Po); Shelly (F); Smoketown (W); Aquetong (K); Jericho Hill (Ws–G).

*There is reasonable doubt at present as to whether *Thelypteris* or *Dryopteris* is the proper generic name to use.

Thelypteris palustris Schott. Marsh Fern.

(*Aspidium Thelypteris* (L.) Sw.) Rhodora, xxxi. 34 (1929).

Wet meadows and ditches; occasional.

Nockamixon (P); Finland (L); Rockhill (F); Oxford Valley (L); Bristol (L).

Thelypteris novaboracensis (L.) Nieuwl. New York Fern.

(*Aspidium novaboracensis* (L.) Sw.) Rhodora, xxi. 178 (1919).

Moist woods; common.

Upper Black Eddy (Tr–P); Buckwampum Mountain (R–R); Rockhill (F); Oxford Valley (B).

Thelypteris marginalis (L.) Nieuwl. Marginal Shield Fern.

(*Aspidium marginale* (L.) Sw.) Rhodora, xxi. 178 (1919).

Damp rich woods; frequent.

Narrowsville (L); Upper Black Eddy (Bn); Haycock Mountain (Sm); Springtown (L); Rockhill (F); Milford Square (B); Spinnerstown (L); Argus (B); Deep Run (L); Aquetong (K); Buckingham (L); Brownsburg (L); Lumberville (L); Buckmanville (L); Center Bridge (L); New Hope (Sg).

Thelypteris Goldiana (Hook.) Nieuwl. Goldie's Fern.

(*Aspidium Goldianum* Hook.) Rhodora, xxi. 177 (1919).

Rich woods in upper end; rare.

Buckwampum Mountain (R–R, August, 1885); Springfield Township (F, August 21, 1881); (Bogs in Milford).

A station one-half mile southwest of Locust Valley, Lehigh County, was long claimed for Bucks County by Dr. I. S. Moyer.

Thelypteris cristata (L.) Nieuwl. Crested Shield Fern.

(*Aspidium cristatum* (L.) Sw.) Rhodora, xxi. 177 (1919).

Swamps and boggy woodlands; not common.

Monroe (R–R); Rich Hill (B); Yardley (Me); Fallsington (L); Penn Valley (C); (Haycock).

Thelypteris cristata (L.) Nieuwl., var. **Clintoniana** (D. C. Eaton) Weatherby.

(*Aspidium cristatum* (L.) Sw., var. *Clintonianum* D. C. Eaton) Weatherby. Rhodora, xxi. 177 (1919).

Boggy woods; rare.

Milford Square (Mu, July 5, 1913).

Thelypteris spinulosa (O. F. Müll.) Nieuwl.

(*Aspidium spinulosum* (O. F. Müll) Sw.) Rhodora, xxi. 178 (1919).

Rich shady moist woods; frequent.

Nockamixon (P); Buckwampum Mountain (L); Milford Square (L); Lumberville (L); Yardley (Me); Fallsington (L); Emilie (L); Tullytown (L); Hulmeville (B).

Thelypteris spinulosa (O. F. Müll.) Nieuwl., var. **intermedia** (Muhl.) Weatherby.

(*Aspidium spinulosum* (O. F. Müll.) Sw., var. *intermedium* (Muhl.) W. C. Eaton). Rhodora, xxi. 178 (1919).

Rich shady woods, apparently as common as the species.

Nockamixon (P); Buckwampum Mountain (L); Springtown (L); Haycock Mountain (L); Milford Square (B); Deep Run (L); Aquetong (K); Roelofs (L); Penns Park (L); Jamison (Dr); Bristol (B); Hulmeville (B).

Thelypteris spinulosa (O. F. Müll.) Nieuwl., var. **fructuosa** (Gilbert) Fernald.

Rhodora, xxviii. 146 (1926).

A variety with wider mature indusia (0.8–1.4 mm.) broad and with pinnae gradually tapering to apex.

Fallsington (F, June 1, 1924).

This specimen was determined by Mr. C. A. Weatherby, of the Gray Herbarium.

Thelypteris Boottii (Tuckerm.) Nieuwl.

(*Aspidium Boottii* Tuckerm.) Am. Mid. Nat., I. 226 (1910 and Rhodora, xxi. 177 (1919.

Wet thickets and borders of swamps; rather local. Possibly this is a hybrid between *T. crista* and *T. spinulosa,* var. *intermedia.*

Milford Square (L); Roelofs (L); Fallsington (L).

Cystopteris bulbifera (L.) Bernh. Bladder Fern.

Along the Delaware River on moist, mostly shaded, cliffs; infrequent.

Nockamixon (Po) (P) (C) (F); Narrowsville (M) (Bn); Lumberville (Bn); Lower Black Eddy (L); (Point Pleasant).

Cystopteris fragilis (L.) Bernh.

Shaded cliffs, banks and rocky woods; more common than the preceding.

Nockamixon (H); Narrowsville (Bn) (M) (Li); Upper Black Eddy (Bn); Sundale (L); Ottsville (L); Sellersville (F); Argus (F); Milford Square (L); Edison (Fo); Buckingham (L); Lumberville (L).

Woodsia ilvensis (L.) R. Br.

Dry exposed rocky places; rare.

Nockamixon (Po) (H) (P) (T) (VP); Narrowsville (M).

Woodsia obtusa (Spreng.) Torr.

Cliffs and rocky banks; infrequent.

Nockamixon (Po) (P); Uhlertown (Me); Ottsville (L); Pleasant Valley (L); Milford Square (L); Carversville (L); Aquetong (K).

Dennstaedtia punctilobula (Michx.) Moore. HAY-SCENTED FERN.

(*Dicksonia punctilobula* (Michx.) Gray.)

Dry or damp sterile open or shaded places; frequent.

Monroe (R–R); Springtown (F); Rockhill (F); Milford Square (F); Aquetong (K); Bycot (Br); Tullytown (B).

Onoclea sensibilis L. SENSITIVE FERN.

Moist thickets and meadows; common.

Narrowsville (R); Nockamixon (M); Rockhill (L); Bycot (Br–P); Tullytown (P) (J).

Pteretis nodulosa (Michx.) Nieuwl. OSTRICH FERN.

(*Onoclea Struthiopteris* of authors.) Rhodora, xxi. 178–179 (1919).

Alluvial soil along Delaware River in upper end; rare.

Nockamixon (M); Narrowsville (V) (Bn); Upper Black Eddy (P).

SCHIZAEACEAE (CURLY-GRASS FAMILY)

Lygodium palmatum (Bernh.) Sw. CLIMBING FERN.

Low woods and thickets; rare.

Yardley (L, Nov. 24, 1923); (Newtown).

OSMUNDACEAE (FLOWERING FERN FAMILY)

Osmunda regalis L., var. **spectabilis** (Willd.) Gray. ROYAL FERN.

Rhodora, xxi. 176 (1919).

Low woods and marshes; locally abundant.

Durham (R–R); Coffman's Hill (Tr–P); Rockhill (F); Pleasant Valley (L); Yardley (Me); Tullytown (M) (Le).

Osmunda Claytoniana L. INTERRUPTED FERN.

Damp woods and edges of swamps; not very common.

Monroe (R–R); Nockamixon (M); Rockhill (F); Almont (L); Center Bridge (B).

Osmunda cinnamonea L. CINNAMON FERN.

Moist ground; frequent.

Durham (R–R); Nockamixon (M); Ringing Rocks, Bridgeton Township (L); Pleasant Valley (B); Ridge Valley (F); Yardley (L); Fallsington (L); Oxford Valley (L); Bristol (Co).

OPHIOGLOSSACEAE (ADDER'S TONGUE FAMILY)

Ophioglossum vulgatum L. ADDER'S TONGUE.

Moist meadows and thickets; local and rare.

Riegelsville (R); Monroe (R); Springtown (We); Finland (Mu); The Hedges, Lower Solebury Township (Ws–G); Woodbourne (J); (Tullytown).

Botrychium tenebrosum A. A. Eaton.

Moist, rocky woods; rare.

Pleasant Valley (L); Finland (L); Geryville (L).

This and *B. simplex* E. Hitchcock are very difficult to separate. It may be that one is merely a form of the other. The northern form growing in dry situations is considered by many to be the true *B. simplex* and the form coming within our range and growing in damp woods and swamps is considered the true *B. tenebrosum*. In *B. simplex* the sterile segment is short petioled and usually arises from the lower part of the scape, while in *B. tenebrosum* the sterile lamina is sessile or very slightly stalked and is the only one with a notch in the top of the sterile portion.

Botrychium ramosum (Roth) Aschers.

Rich woods; rare and local.

Buckwampum Mountain (L); Finland (L); Geryville (L).

The sterile segment is nearly sessile and is borne at the top of the long and slender common stalk.

Botrychium dissectum Spreng.

(*B. obliquum* Muhl., var. *dissectum* (Spreng.) Clute.) Rhodora, xxiii. 151 (1921).

Pastures and open woods; not rare.

Monroe (Pr); Beaver Creek (B); Haycock Mountain (L); Weisel (Sm); Rockhill (F) (M); Almont (L); Grenoble (L); Aquetong (L); George School (Va–G); Fallsington (L); Bristol (B); Tullytown (C); Hulmeville (B).

Botrychium obliquum Mühl.

Pastures and open woods; about as frequent as the preceding species.

Monroe (Pr); Beaver Creek (B); Pleasant Valley (B); Finland (Bl–G); Rockhill (F); Sellersville (F); Deep Run (L); Yardley (Me); Penns Manor (B); Fallsington (L); Tullytown (C) (J) (V); Turkey Hill (B); Bristol (L).

Botrychium virginianum (L.) Sw. Rattlesnake Fern.

Rich woods; common except in lower end.

Durham (R–R); Ottsville (L); Pleasant Valley (B); Richlandtown (L); Shelly (B); Rockhill (M) (F); Finland (L); Milford Square (L); Erwinna (Me); Lahaska (L); Buckmanville (L); Center Bridge (Fi); George School (Va–G); Andalusia (L).

EQUISETACEAE (horsetail family)

Equisetum arvense L. Common Horsetail.

Dry soil; common, often as a weed along railroads, etc.

Nockamixon (P) (C); Lower Black Eddy (L); Spinnerstown (B); Telford (B); New Hope (Sg).

Equisetum sylvaticum L., var. **pauciramosum** Milde.

(*E. sylvaticum* of the Manuals and of Fretz's Flora.) Rhodora, xx. 131 (1918).

Bogs and low woods; infrequent.

Monroe (R–R); Buckwampum Mountain (L); Pleasant Valley (L); near Tullytown (C); (Nockamixon); (Quakertown); (Morrisville).

All the material seen from Bucks County belong to forma *multiromosum* Fernald.

Equisetum litorale Kuehl.

Sandy river shore; rare. Not recently collected.

Point Pleasant (F) (P).

Equisetum limosum L.

(*E. fluviatile* L. of Gray's Manual, ed. 7.) Rhodora, xxiii. 43–45 (1921).

In swamps and along muddy borders of streams; locally abundant.

Nockamixon (C) (L); Quakertown (P); Morrisville (L); Penn Valley (J); Tullytown (F) (L); Croydon (B).

Equisetum hyemale L., var. **affine** (Engelm.) A. A. Eaton. Scouring Rush.

E. hyemale L. is the European species. Schaffner, Amer. Fern Jorn. xi, 65 1921).

Wet places, especially along streams; locally abundant.

Riegelsville (L) (Pr); Narrowsville (Bn) (Br); Brick Tavern (Ha); Argus (B); Point Pleasant (F) (Bn); New Hope (Sg); Jericho Hill (L).

LYCOPODIACEAE (club-moss family)

Lycopodium lucidulum Michx.

Cool damp woods; rather common in upper districts.

Upper Black Eddy (Tr–P); Buckwampum Mountain (L); Pleasant Valley (B); Haycock Mountain (L); Geryville (L); Rockhill (L); Weisel (B); Argus (Sm); Chalfont (L); Aquetong (L); Buckingham Township (F); Buckmanville (L); Center Bridge (F); Yardley (L); Fallsington (L).

[**Lycopodium inundatum** L.

Has not been collected in the County. The material forming the basis of the Tullytown (F) record is *L. adpressum.*]

Lycopodium adpressum (Chapm.) Lloyd & Underw.

Wet sandy and gravelly places; common on Coastal Plain.

Yardley (Me); Tullytown (F) (Le); Bristol (Dr).

Lycopodium alopecuroides L.

Similar situations and distribution as preceding species. The material itself approaches *L. adpressum* but the sphorophylls are not appressed. May be an undescribed variety of it.

Tullytown (F); Bristol (L).

Lycopodium clavatum L. RUNNING PINE.

Dry open woods; rare.

Milford Township (F); Roelofs (L).

Lycopodium obscurum L. GROUND PINE.

Rich woods; frequent.

Durham (R–R); Buckwampum Mountain (L); Pleasant Valley (B); Deep Run (L); Danboro (B); Buckingham Township (F); Yardley (L); Roelofs (L); Oxford Valley (L); Tullytown (C); Bristol (B).

Lycopodium complanatum L., var. **flabelliforme** Fernald. CHRISTMAS GREEN.

(*L. complanatum* of Fretz's Flora.) Rhodora, xiii. 168 (1911).

Dry woods and banks; common.

Uhlertown (Me); Ottsville (B); Haycock Mountain (L); Almont (B); Rockhill (L); Sellersville (F); Deep Run (L); Plumsteadville (Dr); Danboro (B); Doylestown (B); Tullytown (B); Bristol (B); (Ridge Valley).

SELAGINELLACEAE (SELAGINELLA FAMILY)

Selaginella rupestris (L.) Spring.

Dry exposed rocks; rare.

Nockamixon (P) (Po) (R); (Point Pleasant).

Selaginella apoda (L.) Fernald.

(*S. apus* (L.) Spring.) Rhodora, xvii. 68 (1915).

Low grassy places; probably more common than collections indicate.

Pleasant Valley (B); Spinnerstown (L); Ridge Valley (F); Croydon (B).

ISOETACEAE (QUILLWORT FAMILY)

Isoetes riparia Engelm.

Tidal mud shores of the Delaware River; very local.

Penns Manor (B); Tullytown (F); (Andalusia).

[**Isoetes echinospora** Dur., var. **Braunii** (Dur.) Engelm.

Reported from Durham (R) as var. *robusta* Engelm., but the only specimen found which could form the basis for this record has been identified by Mr. T. Chalkley Palmer as *E. Engelmanni.* Pfeiffer, in Monograph of Isoetaceae, p. 170, (1922) quotes a Durham specimen by Ruth, in the University of Minnesota Herbarium with similar label data but different date, under *I. Braunii.* This is more than likely similar material.]

Isoetes Dodgei A. A. Eaton.

River shore; occasional.

Monroe (R); Point Pleasant (Be) (C); Washington's Crossing (B); Morrisville (L); Yardley (L); Penns Manor (B).

Isoetes Engelmanni A. Br.

River shore, also in ponds and ditches; occasional.

Nockamixon (R); Revere (L); Milford Square (Mu); Finland (L); Sellersville (F); Point Pleasant (B); Yardley (L).

[**Isoetes Engelmanni** A. Br., var. **gracilis** Engelm.

Recorded from Sellersville by C. D. Fretz. Existing specimens forming basis for this record were referred to T. Chalkley Palmer who replied, "Plants too young for proper diagnosis."]

TAXACEAE (YEW FAMILY)

Taxus canadensis Marsh. AMERICAN YEW. GROUND HEMLOCK.

Cool woods and moist situations; very local.

Narrowsville (P); Nockamixon (Pf) (V); Beaver Creek (B); Ottsville (L); Tohickon Park (F); Pipersville (L); Edison (Fo); (Bedminster); (Doylestown); (Neshaminy).

PINACEAE (PINE FAMILY)

Pinus Strobus L. WHITE PINE.

Hills and occasional in lowlands; not common. The largest stand of this species is along Beaver Creek near Ottsville.

Durham (R–R); Ottsville (L); Haycock Mountain (L); Rocky Ridge (B); Finland (B); Aquetong (L); Hartsville (L); Center Bridge (L); Morrisville (L); Bristol (B); (Rockhill); (Buckingham).

Pinus rigida Mill. PITCH PINE.

Sandy or barren soil; not common.

Nockamixon (L) (P); Haycock Mountain (L); Spinnerstown (L); Rockhill (L); Bristol (B); (Sellersville).

Pinus virginiana Mill. SCRUB PINE.

Sterile hillsides and dry sandy soil; frequent but nowhere plentiful.

Nockamixon (F) (Pr); Revere (V); Keelersville (Pr); Geryville (L); Rockhill (B); Argus (L); Finland (B); Point Pleasant (G); Bristol (St); Andalusia (L).

Tsuga canadensis (L.) Carr. HEMLOCK.

Rocky hillsides and gravelly places; infrequent.

Nockamixon (M); Pipersville (L); Chalfont (L); Penns Park (L); Croydon (K); (Bedminster); (Sellersville); (Neshaminy).

[**Chamaecyparis thyoides** (L.) BSP. WHITE CEDAR.

Reported from Bristol by I. C. Martindale but no material is extant in any of the local herbaria to substantiate this record.]

Juniperus communis L. COMMON JUNIPER.

Dry soil; rare.

Monroe (R–R); Rockhill (F); Argus (K) (Bn) (C) (Wi).

Juniperus virginiana L. RED CEDAR.

Hillsides and old fields; common.

Monroe (R–R); Ottsville (L); Haycock Mountain (B); Rockhill (F); Finland (L); Aquetong (K).

TYPHACEAE (CAT-TAIL FAMILY)

Typha latifolia L. COMMON CAT-TAIL.

Swamps, pond and ditches; frequent.

Rockhill (F); Neshaminy (Me); Andalusia (L).

Typha angustifolia L.

Marshes and shallow ponds, not so frequent as the preceding.

Monroe (R–R); Shelly (B); Quakertown (P); Rockhill (M) (W); Sellersville (J) (F); Bristol (L).

SPARGANIACEAE (BUR REED FAMILY)

Sparganium eurycarpum Engelm. GIANT BUR REED.

Marshes and shallow water along streams and ponds; occasional.

Edgely (L); Bristol (B).

Sparganium americanum Nutt.

(Includes var. *androcladum* Fernald & Eames.) Rhodora, xxiv. 33 (1922).

Muddy shores and marshes; frequent.

Quakertown (L); Rockhill (B); Finland (B); Almont (B); Doylestown (Me); Grenoble (L); Penn Valley (B); Oxford Valley (L); Bristol (Bo).

Much of our material has the inflorescence branched and is sometimes separated as var. *androcladum* (Engelm.) Fernald & Eames. This branching is of litle importance, however, and Engelmann's "androcladum" is not applicable to this form.

Sparganium androcladum (Engelm.) Morong.

(*S. lucidum* Fernald and Eames). Rhodora, xxiv. 27 (1922).

Muddy shores; only one station known.

Bristol (D, July 30, 1865).

No later material discovered.

NAJADACEAE (PONDWEED FAMILY)

[**Potamogeton natans** L.

Reported as common by Fretz. This is a northern species and does not occur within the county.]

Potamogeton epihydrus Raf.

Ponds and streams; probably more frequent than collections indicate.

Monroe (R–R); Argus (P) (F); Ridge Valley (F); Pipersville (F); Penn Valley (C); Bristol (M).

Potamogeton americanus C. & S.

Slow streams; not rare.

Quakertown (L); Sellersville (F); Neshaminy Falls (Ad); Grenoble (L); Yardley (W).

Potamogeton pulcher Tuckerm.

Ponds of the Coastal Plain; rare.

Tullytown (B); Bristol (Bo).

Potamogeton amplifolius Tuckerm.

Streams and ponds; local.

Monroe (R–R); Quakertown (L); Argus (F); Sellersville (F); Bristol (P).

Potamogeton perfoliatus L.

Ponds and slow streams; local.

Monroe (R–R); Sellersville (F); Tohickon Park (F); Tullytown (C).

***Potamogeton crispus** L.

Streams and brackish shores; occasionally introduced.

Monroe (R–R); New Britain (Sm); Ingham Spring, Solebury Township (Bt); Tullytown (C).

Potamogeton pusillus L.

Ponds and slow streams; frequent.

Argus (L); Tullytown (L); Andalusia (L).

Potamogeton foliosus Raf.

Quiet waters of ponds and streams; frequent.

Pleasant Hill, Haycock Mountain (R. S. Bechtold); Sellersville (F); Tullytown (B).

Potamogeton diversifolius Raf.

(*P. hybridus* Michx.)

Shallow, often stagnant water; frequent.

Quakertown (F); Point Pleasant (L); Chalfont (L); Morrisville (B); Tullytown (B); Bristol (D).

Potamogeton dimorphus Raf.

(*P. Spirillus* Tuckerm., of Fretz's Flora.)

Ponds and ditches; apparently rare.

Bristol (L); (Rockhill).

Potamogeton Robbinsii Oakes.

Slow streams; rare and local.

Quakertown (L); Forks of Neshaminy (Ma).

Zannichellia palustris L., var. **major** (Boen.) Koch.

Rhodora, xxiii. 110 (1921).

Brackish streams; infrequent along the Delaware River in lower end.

Tullytown (L); Andalusia (L).

The typical species is the European plant with sessile or subsessile fruits and with achenes 2–2.5 mm. long whereas the variety which is the American form has the fruit definitely pedicelled and the achenes are 2.5–3.5 mm. long.

Najas flexilis (Willd.) Rostk. & Schmidt.

Ponds and streams; frequent.

Quakertown (L); Argus (L); Finland (B); Point Pleasant (L); Tullytown (L); Andalusia (L).

Najas gracillima (A. Br.) Magnus.

Ponds and slow streams; local.

Quakertown (L); Point Pleasant (L); Tullytown (C); Bristol (P) (D).

JUNCAGINACEAE (ARROW GRASS FAMILY)

[Scheuchzeria palustris L.

In Keller and Brown's Handbook of the Flora of Philadelphia and Vicinity this plant is reported from Rockhill by Joseph Crawford. Mr. Crawford claims that this is an error and declares he never collected the plant in the County. Fernald considers the American form of this plant as var. *americanus*. Rhodora, xxv. 178 (1923).]

ALISMACEAE (WATER PLANTAIN FAMILY)

Sagittaria longirostra (M. Micheli) J. G. Sm.

Swamps and ponds; rare.

Grenoble (L, August 19, 1910).

Sagittaria latifolia Willd. ARROW-LEAF. ARROW-HEAD.

Shallow ponds and streams, shores and marshes; common.

Narrowsville (J); Springfield (B); Point Pleasant (B); Emilie (Dr); Tullytown (B); Andalusia (B).

Some of these specimens were collected on tidal mud. These have narrower leaves and further study may prove them to be a distinct variety.

Sagittaria latifolia Willd., var. **pubescens** (Muhl.) J. G. Sm.

Similar situations as preceding; not common.

Spinnerstown (L); Sellersville (F); Grenoble (L).

[**Sagittaria Engelmanniana** J. G. Sm.

Reported from the County by Porter. Exact locality not known and no material extant to verify the record.]

Sagittaria heterophylla Pursh.

(*S. rigida* Pursh.)

Shores of ponds and streams, preferring sandy or gravelly soil; locally abundant.

Finland (B); Perkasie (F); Sellersville (F); Tohickon Creek (F); Point Pleasant (L); Lumberville (L); Bristol (Dr); Andalusia (L).

Sagittaria graminea Michx.

Muddy shores; frequent in lower end.

Penn Valley (B); Edgely (B); Bristol (M) (Bo); Andalusia (W).

Sagittaria Eatoni J. G. Sm.

Rep. Mo. Bot. Gard. xi. 150 (1899).

Tidal mud; rare.

Bristol (Dr); Andalusia (L).

Segregated from *S. graminea* Michx., from which it differs by having its anthers longer than the filaments.

Sagittaria subulata (L.) Buchenau.

Tidal shores of Coastal Plain; occasional.

Morrisville (L); Tullytown (B); Bristol (Dr); Andalusia (F) (L).

Sagittaria lorata (Chapm.) Small.

(*S. subulata* (L.) Buchenau., var. *gracillima* (Wats.)) J. G. Sm.

N. A. Flora, xvii, 52 (1909).

Along streams; rare.

Bristol (D, no date on label).

Alisma subcordatum Raf. WATER PLANTAIN.

(*A. Plantago-aquatica* of American authors.)

Rept. Comm. Parks & Boulv. Detroit, xi. 44 (1900).

Shallow pools and ditches; frequent.

Monroe (R–R); Finland (B); Argus (L); Sellersville (F); Neshaminy (Mc); Lumberville (B); Oxford Valley (L); Bristol (L).

HYDROCHARITACEAE (FROG'S BIT FAMILY)

Elodea canadensis Michx.

Streams and ponds; occasional.

Point Pleasant (L); Ingham Springs, Solebury Township (Bt); Brownsburg (L); Andalusia (L).

Elodea occidentalis (Pursh) St. John. WATER-WEED.

Rhodora, xxii. 27 (1920).

Similar situations as preceding; more common.

Monroe (R–R); Sellersville (F); Point Pleasant (F); Neshaminy Falls (Ad); Grenoble (L); Brownsburg (L); Tullytown (L); Bristol (L); Andalusia (L); (Sollidays Island).

In *E. canadensis* the leaves are oblong to ovate-oblong, mostly obtuse and flowers are hermaphroditic, while in *E. occidentalis* the leaves are linear and the plants are dioecious.

Vallisneria americana Michx. EEL GRASS.

(*V. spiralis* L.) Rhodora, xx. 108 (1908).

Slow streams and ponds; locally abundant.

Monroe (R–R); Neshaminy Falls (Ad); Brownsburg (L); Morrisville (B); Andalusia (L).

GRAMINEAE (GRASS FAMILY)

***Bromus secalinus L.** CHEAT. CHESS.

Naturalized from Europe, recognized as a weed; occasional.

Riegelsville (R–R); Rich Hill (L); Sellersville (B); Telford (Sm); Dublin (B); Tullytown (K).

[Bromus racemosus L.

Very rare in the United States and not known from Bucks County. The old records of this species are referred to *B. commutatus.*]

***Bromus commutatus** Schrad.

(*B. racemosus* of Fretz's Flora.)

A weed of fields, roadsides and waste places; naturalized from Europe; frequent.

Monroe (R–R); Rich Hill (B); Sellersville (F); Tullytown (B); Croydon (K).

***Bromus tectorum L.**

Naturalized from Europe; rather frequent.

Durham Furnace (R–R); Ottsville (L); Sellersville (B); Telford (B); Tullytown (K); Bristol (F); Croydon (K).

***Bromus sterilis L.**

A European introduction; rare.

Telford (F); New Hope (Sn).

[Bromus ciliatus L.

This is a northern species and does not occur in Bucks County. The material forming the basis of the Fretz records for Quakertown and Rockhill was undoubtedly *B. purgans.*]

Bromus purgans L. BROME-GRASS.

Dry to moist woods and thickets; frequent.

Revere (V); Ottsville (L); Pleasant Valley (L); Rockhill (J); Rocky Ridge (V); Sellersville (F); Tohickon Park (F); Lumberville (F); Brownsburg (B); Morrisville (B); Feasterville (B).

Bromus latiglumis (Shear) Hitchcock.

(*B. altissimus* Pursh of Gray's Manual, ed. 7.)

Alluvial banks and thickets; not frequent.

Riegelsville (Bn); Finland (Bl); Argus (B); Brownsburg (L); Washington's Crossing (L).

This is the plant with lower sheaths glabrous, but with the upper ones more or less pubescent and the awns of the lemmas 4–5 mm. long. It is often confused with *B. incanus* (Shear) Hitchc., which has the lower sheaths more or less pubescent and the upper ones pilose, densely so about the throat and with the awns of the lemmas 5–8 mm. long. Wiegand regards this as a form of *B. latiglumis*.

Rhodora, xxiv. 91 (1922). We have no Bucks County material of the *B. incanus* type.

Bromus Kalmii Gray. Wild Chess.

Dry, or damp woods or open soil; rare.

Revere (L); Sellersville (F).

***Festuca myuros** L.

A European introduction; rare.

Rockhill (Br, June 19, 1892).

Festuca octoflora Walt.

Dry open woods and sterile banks; very local.

Monroe (R–R); Buckwampum Mountain (L); Perkasie (F); Sellersville (F); Emilie (B); (Tullytown); (Andalusia).

Festuca rubra L.

Sandy or gravelly soil; rare.

Monroe (R–R, June, 1886); Kintnersville (R–R, June 10, 1899).

Festuca ovina L. Sheep's Fescue.

Sandy soil; rare.

Andalusia (L, June 22, 1924).

This is the *F. ovina duriuscula* (L.) Koch. of Fretz's Flora where Martindale is credited with the record. This species is more common northward, from where it has probably been introduced.

Festuca ovina L., var. **capillata** (Lam.) Hack.

Distinguished from the preceding by its more slender leaves and awnless lemmas.

Andalusia (L, June 22, 1924).

This is the only specimen of this variety from Pennsylvania in the Philadelphia Botanical Club Herbarium.

***Festuca elatior** L. Meadow Fescue.

Cultivated ground and waste places, introduced; not rare.

Monroe (R–R); Narrowsville (L); Richlandtown (L); Rich Hill (L); Spinnerstown (L); Telford (B); Bycot (?); Buckingham (K).

Festuca obtusa Spreng.

(*F. nutans* Spreng.)

Woods; well distributed in upper end of County, never very abundant at any station.

Monroe (R–R); Narrowsville (F); Upper Black Eddy (Pr); Ottsville (L); Pleasant Valley (B); Rich Hill (L); Milford Square (L); Aquetong (Wi).

Glyceria melicaria (Michx.) Hub.

(*G. Torreyana* (Spreng.) Hitchc.)

Rhodora, xiv. 186 (1912).

Wet woods; rare.

Yardley (L); (Milford).

Glyceria canadensis (Michx.) Trin. Rattlesnake Grass.

Borders of ponds, ditches, and swamps; locally abundant.

Quakertown (F); Rockhill (B); Yardley (Dr); Turkey Hill (L); Tullytown (B); (Bensalem).

Glyceria striata (Lam.) Hitchc. Fowl Meadow Grass.

(*Glyceria nervata* (Willd.) Trin.) Proc. Washington Biol. Soc., xli. 157 (1928).

Wet places; not infrequent.

Monroe (R–R); Rockhill (Br); Telford (B); Curley Hill (B); Neshaminy (Mc); Yardley (Dr); Turkey Hill (L); Tullytown (K).

Glyceria grandis Wats. REED MEADOW GRASS.

Wet soil; rare.

Monroe (R–R, June, 1885).

This specimen probably is the basis for the Durham (Twp.) record.

Glyceria pallida (Torr.) Trin.

Shallow water, lower end of county; rare.

Slickville (L); Tullytown (V); Edgely (L); Bristol (L); Oxford Valley (L); (Quakertown); (Bensalem).

Glyceria plicata Fries.

(*G. septentrionalis* Hitchc.).

Shallow stagnant water; probably more frequent than herbarium material indicates.

Kintnersville (Dr); Rockhill (V); Milford Square (L); Telford (B); Buckingham (Dr); Fallsington (L).

Confused with *G. fluitans* (L.) R. Br. in Fretz's Flora.

Glyceria acutiflora Torr.

Pond holes in lower end; rare.

Fallsington (L); Slickville (L); Tullytown (F) (V).

***Poa annua** L.

Naturalized in lawns, cultivated ground and waste places generally; common.

Monroe (R–R); Springtown (L); Sellersville (F); Telford (B); Andalusia (L).

Flowers from late March to October.

***Poa compressa** L. CANADA BLUE GRASS.

Dry, open, rather sterile soil; common.

Nockamixon (Ha); Shelly (F); Rockhill (F); Telford (Sm); Aquetong (K).

Sometimes cultivated as a pasture grass.

[**Poa palustris** L.

(*P. triflora* Gilib.) Rhodora, xviii. 235 (1916).

Reported from Durham (R) but no authentic material could be found to verify this record.]

***Poa pratensis** L.

Fields, meadows and waste places; abundant.

Monroe (R–R); Ferndale (L); Rich Hill (L); Sellersville (F); Neshaminy (Mc); Morrisville (L).

Used extensively as a lawn grass. Also valuable for permanent pastures.

***Poa trivialis** L. Rough-stalked Meadow Grass.

Naturalized along roadsides, ditches and elsewhere, in damp soil; common.

Monroe (R–R); Sellersville (F); Telford (B); Sundale (L); Buckingham (L); Yardley (L).

[**Poa sylvestris** Gray.

Reported from Nockamixon (G), but no specimen has been found to cover this record.]

[**Poa autumnalis** Mühl.

Recorded from Nockamixon (F) but the record remains unverified.]

Poa cuspidata Nutt.

(*P. brachyphylla* Schult.) Rhodora, iv. 145 (1902).

Rocky or hilly woods and shaded cliffs; not infrequent along the Delaware River and its larger tributaries.

Monroe (L); Nockamixon (L); Pipersville (L); Rushland (L); New Hope (L).

Eragrostis hypnoides (Lam.) BSP.

Sandy or muddy shores of the Delaware River; locally abundant.

Kintnersville (R–R); Point Pleasant (F); Lumberville (L); Center Bridge (L); Brownsburg (L); Washington's Crossing (Me); Yardley (L); Morrisville (L); Bristol (Ma).

Eragrostis capillaris (L.) Nees.

Rather dry, usually sandy or gravelly soil; frequent.

Monroe (R); Narrowsville (Bn); Ottsville (B); Pleasant Valley (B); Finland (L); Lumberville (L); Brownsburg (B); Woodbourne (L).

Eragrostis Frankii (Fisch., Mey. & Lall.) Steud.

Dry or damp sandy soil; infrequent.

Monroe (R); Lumberville (L); Brownsburg (L); Washington's Crossing (Me); Yardley (L); Morrisville (L).

***Eragrostis pilosa** (L.) Beauv.

Open ground; sparingly introduced.

Monroe (R–R, September, 1885); Telford, along railroad (B, October 1, 1921); (Sellersville).

Eragrostis caroliniana (Spreng.) Scribn.

(*E. Purshii* Schrad. of Manuals.)

Roadsides, fields, meadows and waste places; frequent.

Kintnersville (R–R); Sellersville (F); Telford (B); Point Pleasant (F); Center Bridge (L); Washington's Crossing (Me); Yardley (L); Morrisville (B); (Durham).

***Eragrostis perigrina** Wiegand.

(*E. pilosa* var. *condensata* Hackel.) Rhodora, xix. 93 (1917) and xxi. 133 (1919).

A weedy grass, its native land unknown; becoming frequent.

Quakertown (Bl); Rockhill (B); Doylestown (L); Carversville (F); Point Pleasant (L); Lumberville (L); Woodbourne (L); Tullytown (B).

***Eragrostis cilianensis** (All.) Link.

(*E. megastachya* (Koeler) Link.) Rhodora, xviii. 235 (1916).

Introduced along roadsides and in waste places; frequent.

Monroe (R–R); Sellersville (F); Telford (B); Doylestown (B); Washington's Crossing (L); Morrisville (Kr); Bridgewater (B); Andalusia (Kr).

[**Eragrostis minor** Host.

(*E. Eragrostis* of authors.)

There is a Bensalem (Ma) record but no specimen has been found to verify the record.]

Eragrostis spectabilis (Pursh) Steud.

(*E. pectinacea* (Michx.) Steud. of Manuals.) Amer. Midland Nat., x, 306 (1927).

Dry, usually sandy ground; frequent.

Nockamixon (B); Quakertown (B); Neshaminy (Mc); Yardley (Dr); Morrisville (Kr); Tullytown (Dr); Bristol (Dr).

[**Eragrostis spectabilis** (Pursh) Steud., var. **sparsihirsuta** Farwell.

(*E. pectinacea* var. *spectabilis* of Gray's Manual, ed. 7.) Amer. Midland Nat., x. 306 (1927).

This is Farwell's name for the plants with the smooth sheaths. Fretz reports this variety from the County but all of our material appears to be typical of the species rather than the variety.]

[**Uniola laxa** (L.) BSP.

Reported from Bristol (Ma) but no material has been found in the local herbaria.]

***Dactylis glomerata** L. Orchard Grass.

Meadows, fields, roadsides and waste places, naturalized from Europe; common.

Springtown (L); Sellersville (F); Telford (B).

***Cynosurus cristatus** L. Dog's Tail Grass.

Introduced with meadow and lawn mixtures; rare.

In yard, Quakertown (Bl, July 4, 1921).

Triodia flava (L.) Hitchc. Tall Redtop.

(*Tricuspis sesleroides* of Fretz's Flora. *Tridens flavus* of Gray's Manual, ed. 7.)

Dry or sandy slightly acid open soil; frequent.

Monroe (R–R); Sellersville (F); Telford (B); Washington's Crossing (Me); Morrisville (B); Emilie (B); Bristol (B).

***Agropyron repens** (L.) Beauv. Quack Grass. Couch Grass.

Introduced along railroads, highways and in waste places; probably much more frequent than collections indicate.

Kintnersville (Dr); Croydon (Dr).

***Secale cereale** L. Rye.

Cultivated ground, waste places and thickets, but fails to perpetuate itself; not rare.

Thicket, Ringing Rocks Falls in Bridgeton Township (F, May 14, 1921).

Elymus virginicus L. WILD RYE.

Stream banks and moist woods; frequent.

Beaver Creek (B); Finland (L); Neshaminy (L); Bridge Valley (Dr); Bristol (B).

Elymus virginicus L., var. **hirsutiglumis** (Scribn.) Hitchc.

This variety is distinguished from the species by the hirsute lemmas and glumes. Habitat like that of the species; frequent.

Point Pleasant (L); Washington's Crossing (Me); Morrisville (B); Andalusia (L).

Elymus striatus Willd.

Wooded slopes, banks of streams and roadsides; occasional but not very abundant at any station.

Nockamixon (L); Pipersville (L); Brownsburg (L); Washington's Crossing (Dr); Croydon (L).

Elymus riparius Wiegand.

(*E. canadensis* of Manual, in part.) Rhodora, xx. 81 (1918).

Alluvial flats and stream banks; common.

Beaver Creek (B); Passer (Wi); Argus (B); Sellersville (F); Point Pleasant (L); Washington's Crossing (L); Newportville (L); Bristol (B); Andalusia (L).

Elymus robustus Scribn. & J. G. Sm.

Dry sandy, or gravelly soil along the Delaware River; frequent.

Most of our early reports of *E. canadensis* can be referred to this species. According to Wiegand, Rhodora, xx, 88 (1918) *E. canadensis* is a species of the Northeast and does not belong in Bucks County.

Nockamixon (B); Point Pleasant (L); Lumberville (L); Washington's Crossing (Me); Tullytown (B); Bristol (C).

Asperella Hystrix (L.) Humb.

(*Hystrix Hystrix* of Fretz's Flora, in part.
Hystrix patula Moench, in part.) Rhodora, xiv, 187 (1912).

Woods and thickets; not rare.

Point Pleasant (L); Grenoble (L); (Sellersville).

Asperella Hystrix (L.) Humb., var. **Biegeloviana** Fernald.

(*Hystrix Hystrix* of Fretz's Flora, in part.)

Rhodora, xxiv. 229 (1922).

A northern variety with pilose spikelets found in thickets along the Delaware River. The species, which is typically a more southern plant, occurs in the inland portions of the County.

Narrowsville (L); Brownsburg (Dr); Morrisville (L).

***Hordeum jubatum** L. Squirrel-tail Grass.

An introduced weedy grass along roadsides and railroads and in fields and waste places; occasional but becoming more frequent.

Shelly (B); Quakertown (F); Telford (B); Buckingham (L).

***Hordeum pusillum** Nutt.

Sparingly introduced in our area from the West; rare.

In ditch, Perkasie (F. L. Bassett, June 16, 1896.)

This material was erroneously labelled *H. nodosum* (L) and forms the basis of the Perkasie record for this species. There is no *H. nodosum* material extant from Bucks County.

Triticum aestivum L. Wheat.

Fields and waste places as an escape but doubtfully persistent for any considerable period of years; rare.

Blooming Glen (L, July 31, 1923).

***Lolium perenne** L. Common Darnel.

Meadows, fields, lawns, etc.; rare.

Monroe (R–R); Springtown (L); Milford Square (L).

Probably introduced through grass seed.

***Lolium multiflorum** Lam. Italian Rye Grass.

Similar habitats as preceding species, also introduced; rare.

Sellersville (F); Andalusia (L).

***Lolium temulentum** L. Bearded Darnel.

A weed of grain fields and waste places; rare.

Grain field, Fountainville (Gr, 1869).

Sphenopholis pennsylvanica (L.) Hitch.

(*S. palustris* (Michx.) Scribn. and *Trisetum pennsylvanicum* (L.) Beauv.). Rhodora, xviii. 234 (1922).

Moist ground; not common.

Buckwampum Mountain (R–R); Finland (L); Argus (F); Yardley (L); (Milford); (Bensalem).

Sphenopholis obtusata (Michx.) Scribn.

Thickets and dry, open soil; rare.

Bursonville (R–R); Rockhill (F); Telford (Sm); (Andalusia).

Sphenopholis nitida (Spreng.) Scribn.

Dry open soil and wooded slopes; frequent.

Monroe (R–R); Upper Black Eddy (Pr); Revere (L); Ottsville (L); Finland (L); Spinnerstown (L); Argus (F); Dublin (L); Doylestown (Dr); Lahaska (L); Rushland (L); Grenoble (L); Andalusia (M).

Sphenopholis pallens (Spreng.) Scribn.

Old fields, moist woods, wet cliffs and bogs; rather common.

Durham (R–R); Upper Black Eddy (Fo); Shelly (F); Spinnerstown (L); Telford (B); Point Pleasant (L); Doylestown (Dr); Glen Lake (F); Morrisville (L); Andalusia (L).

***Avena fatua** L. Oats.

Waste land and sterile fields; rare.

Quakertown (A); Perkasie (F).

***Arrehnatherum elatius** (L.) Beauv. Oat Grass.

Fields, meadows and waste places; infrequent.

Milford Square (L); Sellersville (F); Edison (Fo); Langhorne (F) (Bn).

Aira caespitosa L.

(*Deschampsia caespitosa* (L.) Beauv.)

Wet open soil; rare.

Durham (R–R); Spinnerstown (L).

Aira flexuosa L. Hair Grass.

(*Deschampsia flexuosa* of Gray's Manual, ed. 7.)

Dry situations; frequent.

Monroe (R–R); Center Bridge (L); Washington's Crossing (L); Morrisville (L); Croydon (K).

***Holcus lanatus** L. VELVET GRASS.

Fields, roadsides and meadows; frequent.

Monroe (R–R); Pleasant Valley (L); Sellersville (F); Telford (B); Morrisville (Dr).

Danthonia spicata (L.) Beauv.

Poor dry sandy or gravelly soil; frequent.

Bursonville (R–R); Ottsville (L); Rockhill (M); Perkasie (F); Bycot (K); Turkey Hill (L).

Danthonia compressa Aust.

Dry open woods; rare.

Yardley (L, July 8, 1927); Fallsington (L, October 3, 1931).

Calamagrostis canadensis (Michx.) Nutt.

(*C. canadensis* (Michx.) Beauv. of Gray's Manual ed. 7.) Rhodora, xxiv. 142–143 (1922).

Marshes and wet ditches, locally abundant.

Monroe (R–R); Quakertown (B); Morrisville (L); Tullytown (L).

Calamagrostis cinnoides (Mühl.) Barton.

Moist thickets; rare.

Near Ringing Rocks (R–R); Yardley (Dr, Sept. 28, 1924) (Fo–P, September 27, 1924).

***Agrostis stolonifera** L., var. **major** (Gaudin) Farwell. BENT GRASS.

(*A. alba* of Gray's Manual, ed. 7.)

A native of Europe which in recent years has been much used on lawns and golf links. No material of the typical species is in our collections from Bucks County but it is likely to be found near estates and country clubs. It is a polymorphic species and a number of varieties are known. For a treatment of *A. stolonifera* and its varieties see "Malte's Commercial Bent Grasses (Agrostis) in Canada," in Annual Report, National Museum of Canada, 105–126 (1926).

Naturalized from Europe; frequent.

Monroe (R–R); Springtown (F); Rich Hill (L); Perkasie (F); Bycot (K); Bristol (B) (Dr).

All of this material has the ligule of the lower and middle leaves 2–5 mm. long and rounded at the apex. The Rhode Island bent grass (var. *vulgaris* of Gray's Manual, ed. 7, also known as *A. capillaris* L.) has the ligule of the lower and middle leaves 0.5–1.3 mm. long and truncate at apex. No herbarium material of this latter variety from the County was discovered, although the Bristol material seems to approach this variety.

Agrostis antecedens Bicknell.

Bul. Torr. Bot. Club, xxxv. 473 (1908).

Dry fields and roadsides; not frequent.

Telford (B); Morrisville (L); Turkey Hill (L); Tullytown (B).

A segregate from *A. hyemalis* from which it differs in the branches of the panicle arising well above the middle and in having smaller spikelets more clustered at the ends of the branchlets. It begins to bloom in May while *A. hyemalis* rarely blooms before July.

[**Agrostis hyemalis** (Walt.) BSP.

Reported from the County but no material has been found. It has a scattered distribution and its nearest known occurrence to our area is at Willow Grove, Montgomery County.]

Agrostis perennans (Walt.) Tuckerm. THIN GRASS.

Shaded damp places or in low open ground; common.

Wyker's Island (R–R); Pleasant Valley (B); Finland (L); Rockhill (B); Brownsburg (B); Bristol (B).

A specimen gathered in a thicket, Yardley (Dr, September 28, 1924) approaches var. *elata* of Gray's Manual, ed. 7. (*A. altissima* Tuckerm.)

Agrostis Schweinitzii Trin.

Moist woods and thickets; occasional.

Perkasie (A); Grenoble (L); Yardley (Dr); Morrisville (B); Turkey Hill (B); Tullytown (B); Newportville (B).

A segregate from *A. pernnans.* It is characterized by its weak or decumbent culms and lax blades.

Cinna arundinacea L.

Moist shaded ground; frequent in lower end, rather local elsewhere.

Wyker's Island (R–R); Quakertown (Pr); Finland (L); Washington's Crossing (Me); Yardley (B); Fallsington (L); Tullytown (B); Newportville (B); Andalusia (L).

Alopecurus aequalis Sobol. FLOATING FOXTAIL.

(*A geniculatus* L., var. *aristulatus* Torr.)

Bul. N. Y. State Mus. ccliv. 94 (1924).

Roadside ditches and marshes; rare.

Two miles south of Morrisville (Dr, May 29, 1926).

This country is very flat and although the label data does not give complete information, it most likely occurred in a roadside ditch.

[Polypogon Monspeliensis (L.) Desf.

In the County according to Dr. Thomas C. Porter but no material to cover this record could be found.]

Phleum pratense L. TIMOTHY.

Fields, meadows and roadsides, escaped from cultivation; frequent.

Monroe (R–R); Shelly (B); Telford (B); Neshaminy (Mc); Oxford Valley (B).

Muhlenbergia sobolifera (Mühl.) Trin.

Dry rocky wooded slopes and gravelly hillsides; not frequent.

Monroe (R–R); Beaver Creek (B); Sellersville (B); Lumberville (L); Grenoble (L).

Muhlenbergia sylvatica Torr.

Moist woods and shaded banks; infrequent.

Monroe (R–R); Revere (L); Beaver Creek (B); Haycock Mountain (B); Shelly (B); Finland (B); Argus (L); (Sellersville).

Muhlenbergia tenuiflora (Willd.) BSP.

Moist rocky and wooded slopes; rare.

Near Ottsville (L, September 19, 1931); (Haycock).

Muhlenbergia foliosa Trin.

Moist thickets, marshes and along ditches usually in sparse colonies; rare and local.

Monroe (R); Pleasant Valley (B); Finland (L); Almont (L); Morrisville (L).

Muhlenbergia mexicana (L.) Trin.

A weedy grass of fields, meadows and waste places; common.

Durham Furnace (B); Beaver Creek (B); Pleasant Valley (B); Rockhill (B); Sellersville (F); Point Pleasant (L); Doylestown (B); Bridge Valley (Dr); Brownsburg (L); Washington's Crossing (Me); Morrisville (B); Penns Manor (B); Tullytown (B).

Muhlenbergia racemosa (Michx.) BSP.

Moist lowlands in upper part of county; infrequent.

Pleasant Valley (B); Argus (L); Finland (L).

A northern species nearing its southern limits here.

Muhlenbergia Schreberi J. F. Gmel. NIMBLE WILL. DROPSEED.

Open woods, fields and waste places; not rare.

Durham (We); Quakertown (B); Telford (B); Grenoble (L); Penns Park (L); Yardley (Dr).

Sporobolus asper (Michx.) Kunth.

Generally on rather dry, sandy soil; rare.

Narrowsville (J, September 5, 1896).

Sporobolus vaginiflorus (Torr.) Wood.

Dry fields, roadsides, railroads and waste places; occasional.

Monroe (R–R); Quakertown (Bl–G); Argus (L); Sellersville (F); Telford (Sm); Traymore (L).

***Heleochloa schoenoides** (L.) Host.

An adventive from Europe usually found in waste places; rare.

Kintnersville (R–R, September 20, 1897); (Bensalem).

Dilepyrum erectum (Schreb.) Farwell.

(*Brachyelytrum erectum* of Gray's Manual, 3d. 7.) Amer. Mid. Nat. viii. 33 (1922).

Rocky woods and ravines; rare.

Narrowsville (L); Rockhill (Bl); Point Pleasant (L); Sundale (L); Buckmanville (L).

Oryzopsis racemosa (Sm.) Ricker.

Rocky woods; rare.

Ringing Rocks (R–R); Rocky Valley, near Passer (Pr); Rockhill (W).

Stipa avenacea L. BLACK OAT GRASS.

Dry soil; rare.

Durham Furnace (Ws, June 9, 1929); (Andalusia).

Aristida dichotoma Michx. POVERTY GRASS.

Sterile soil, usually in sandy fields or roadsides; occasional.

Bursonville (R–R); Telford (B); Roelofs (L); Morrisville (B); Bristol (B) (Dr).

Aristida longespica Poir.

(*A. gracilis* Ell.) Cont. U. S. Nat. Herb. xxii. 539 (1924).

Dry usually sandy soil; not common.

Rockhill (F); Finland (L); Roelofs (L).

[**Aristida purpurascens** Poir.

Usually occurs in sandy or gravelly soil.

Point Pleasant is a record but not covered by any herbarium material.]

***Eleusine indica** (L.) Gaertn. GOOSE GRASS.

A weedy grass of waste places and cultivated ground; frequent.

Monroe (R–R); Sellersville (F); Telford (B); Morrisville (Me); Penn Valley (C).

[**Cynodon Dactylon** (L.) Pers. BERMUDA GRASS.

Reported from Bristol, but no material was found to cover this record.]

Spartina Michauxiana Hitchc. CORD GRASS.

River shore; rare and local.

Wyker's Island (R–R); Bristol (B).

[**Spartina cynosuroides** (L.) Roth.

Reported from Durham (R); As thie species occurs only in salt and brackish marshes this record cannot be valid. It is probably based on the preceding species but no material was found to prove this.]

***Anthoxanthum odoratum** L. Sweet Vernal Grass.

Fields, meadows and waste places; frequent.

Monroe (R–R); Buckwampum Mountain (B); Milford Square (L); Telford (B); Dublin (L); Neshaminy (Mc); Grenoble (L).

[**Phalaris canariensis** L. Canary Grass.

This grass is generally found in our range in waste places and on garbage dumps springing from waste bird seed but does not seem to maintain itself for any length of time. We have no herbarium material from the County although it is reported from Sellersville and Bensalem.]

Phalaris arundinacea L. Reed Canary Grass.

Moist soil; common.

Monroe (R–R); Pleasant Valley (B); Shelly (B); Telford (B); Morrisville (L); Andalusia (L).

Leersia virginica Willd. White Grass.

Moist shaded places; frequent.

Monroe (R–R); Upper Black Eddy (Tr–P); Beaver Creek (B); Springtown (We); Quakertown (B); Point Pleasant (L); Buckingham (L); Neshaminy (Mc); Penns Park (L); Woodbourne (L); Washington's Crossing (Me); Yardley (Dr); Morrisville (B); (Sellersville).

Leersia oryzoides (L.) Sw. Rice Cut-grass.

Wet, open soil; frequent.

Monroe (R–R); Shelly (B); Quakertown (B); Springtown (We); Perkasie (B)(F); Telford (B); Yardley (Dr); Oxford Valley (B); Morrisville (Dr).

Zizania aquatica L. Wild Rice.

(*Z. palustris* L. of Fretz's Flora.) Rhodora, xxvi, 153 (1924).

Boggy borders of streams, sloughs and swamps; common in Coastal Plain districts.

Tullytown (F); Scott's Creek (B); Bristol (B).

Digitaria filiformis (L.) Koeler.

Dry or sterile soil; rare.

Monroe (R–R); Argus (K); Roelofs (L); Tullytown (B).

***Digitaria Ischaemum** Schreb. Finger Grass.

(*D. humifusa* Pers.) Rhodora, xviii. 231 (1916).

Introduced on cultivated and waste ground; becoming more frequent.

Neshaminy (Mc); Brownsburg (L); Morrisville (B); Yardley (L); Andalusia (Kr).

***Digitaria sanguinalis** (L.) Scop. Crab Grass.

A weedy plant in cultivated and waste ground; common.

Sellersville (F); Telford (B); Point Pleasant (B); Neshaminy (Mc); Washington's Crossing (Me); Yardley (L); Morrisville (B); Fallsington (L); Andalusia (Dr).

Paspalum setaceum Michx.

Dry sandy soil; rare.

Turkey Hill (B, Aug. 24, 1920).

Paspalum pubescens Muhl.

Dry or moist open ground or open woods; frequent.

Monroe (R–R); Pleasant Valley (B); Rocky Valley, near Passer (Pr); Three Mile Run (Pr); Almont (B); Sellersville (F); Telford (B); Aquetong (L); Grenoble (L); Morrisville (B); Bristol (F).

Paspalum Muhlenbergii Nash.

Sandy soil and fields; rare.

Tullytown (Sn, September 20, 1930).

Perhaps only a phase of *P. pubescens*. It is the glabrous form with wider leaves (7–10 mm.) and is less frequent with us.

Paspalum laeve Michx.

Open soil and thickets; rare.

East of Tullytown along Scott's Creek (B, Sept. 1, 1921).

Paspalum longipilum Nash.

(*P. plenipilum* Nash.) Cont. U. S. Nat. Herb., xxvii, pt. 1, 182 (1929).

Damp sandy soil of the Coastal Plain; rare and local.

Penn Valley (B); Bristol (L).

Paspalum circulare Nash.

Fields, meadows and waste ground; frequent.

Monroe (R–R); Pleasant Valley (B); Perkasie (Pr); Sellersville (F); Doylestown (R–R); Grenoble (L); Morrisville (L); Emilie (B); Roelofs (L); Tullytown (F).

Panicum verrucosum Muhl.

Moist sandy soil of Coastal Plain; locally abundant.

Morrisville (B); Fallsington (L); Bristol (L).

Panicum capillare L. Old-witch Grass.

Sandy soil, cultivated fields, roadsides and waste places as a weed; common.

Monroe (R–R); Beaver Creek (B); Sellersville (F); Telford (B); Neshaminy (Mc); Center Bridge (L); Washington's Crossing (Me); Morrisville (Dr); Tullytown (B).

Panicum Gattingeri Nash.

Gravelly fields and waste places; becoming frequent.

Finland (L); Lumberville (L); Neshaminy (Mc); Wrightstown (B); Morrisville (Fo–P); Fallsington (L).

Panicum flexile (Gattinger) Scribn.

Boggy meadows in northern part of County; very local.

Pleasant Valley (B); Quakertown (Bl); Finland (L).

Panicum philadelphicum Bernh.

Dry open woods, fields, meadows and roadsides; frequent.

Nockamixon (P); Beaver Creek (B); Pleasant Valley (B); Quakertown (A); Rockhill (F); Perkasie (F); Sellersville (F); Telford (B); Point Pleasant (L); Penns Park (L); Fallsington (L).

Panicum dichotomiflorum Michx.

(*P. proliferum* of Fretz's Flora.)

Moist soil in open woods, fields, meadows and waste places; frequent.

Monroe (R–R); Beaver Creek (B); Pleasant Valley (B); Sellersville (F); Washington's Crossing (Me); Yardley (Me); Tullytown (B).

Panicum virgatum L. Switch Grass.

Dry or moist open soil and open woods; frequent, especially along the Delaware River.

Wyker's Island (R–R); Point Pleasant (F); Brownsburg (L); Washington's Crossing (Me); Yardley (L); Morrisville (Ba); Penns Manor (B); Tullytown (L); Bristol (Dr) (F); Andalusia (L).

Panicum longifolium Torr.

Moist sandy soil on the Coastal Plain where it is frequent.

Yardley (L); Morrisville (L); Fallsington (L); Roelofs (L); Bristol (D).

Panicum agrostoides Spreng.

Wet meadows and shores; frequent.

Wyker's Island (R–R); Quakertown (B); Sellersville (F); Telford (B); Point Pleasant (P); Brownsburg (B); Fallsington (L); Bristol (B).

Panicum stipitatum Nash.

A coarse grass growing in clumps in moist open soil; rare and local.

Quakertown (Pr); Scott's Creek near Tullytown (B).

The Quakertown occurrence is in a long abandoned clay digging. It may be an introduction there.

Panicum anceps Michx.

(*P. rostratum* Muhl.)

Moist open soil; infrequent.

Durham (We); Pleasant Valley (B); Sellersville (B); Morrisville (B); Bristol (L).

Panicum depauperatum Muhl.

Dry woods and slopes; frequent.

Sellersville (P); Turkey Hill (L).

Panicum linearifolium Scribn.

Dry wooded slopes and thickets; frequent.

Monroe (R–R); Narrowsville (L); Revere (L); Wormansville (L); Finland (L); Rockhill (V) (M); Perkasie (F); Sellersville (F); Argus (F).

Panicum linearifolium Scribn., var. **Werneri** (Scribn.) Fernald.

(*P. Werneri* Scribn.) Rhodora, xxiii. 195 (1921).

Distinguished from the species by its glabrous sheaths; habitat is the same; rare.

Pipersville (L, July 17, 1927).

Panicum dichotomum L.

(Includes *P. barbulatum* Michx. of Fretz's Flora.)

Dry to moist open woods, thickets, meadows and banks; common.

Revere (L); Pleasant Valley (B); Rockhill (M); Argus (F); New Britain (B); Buckingham (L); Bycot (K); Lahaska (L); Yardley (L); Turkey Hill (L); Tullytown (K); Bristol (F).

The two species are combined here because they do not seem to warrant division.

Panicum yadkinense Ashe.

Reported by Taylor in "Flora of the Vicinity of New York," page 111 (1915) as occurring near Sellersville. His basis for this record is a sheet of this species in the herbarium of the New York Botanical Garden collected by Dr. C. D. Fretz, near Argus, on Oct. 5, 1899. Dr. Fretz's address, Sellersville, is printed at the bottom of the label and the relative proximity of Argus to Sellersville is probably the reason why Dr. Taylor quotes the record as "from near Sellersville."

This species is not represented from Bucks County in the local herbaria.

Panicum lucidum Ashe.

Sphagnous meadow, Morrisville (L, September 27, 1924, and June 23, 1927).

Panicum microcarpon Muhl.

(*P. barbulatum* of American authors, not Michx.) Cont. U. S. Nat. Herb. xv, 191 (1910).

Moist, usually shaded ground; not rare.

Buckingham (Dr); Morrisville (Dr); Fallsington (L); Emilie (Dr); Turkey Hill (L); Tullytown (F); Bristol (F); (Penn Valley).

[Panicum annulum Ashe.

Reported from Bucks County in Taylor's "Flora of the Vicinity of New York," page 112 (1915). His basis for this record is a sheet in the herbarium of the New York Botanical Garden collected by E. P. Bicknell in "peaty soil in low open ground at Penn Valley, on May 30, 1899." The specific name is in the handwriting of George V. Nash, to whose collection the specimen formerly belonged. The material is too immature for definite diagnosis and the habitat is not that of this species. The material strongly suggests *P. microcarpon* as does also the habitat.]

Panicum Lindheimeri Nash.

(*P. nitidum* Lam. of Fretz's Flora.)

Dry open places or open woods; not rare.

Rocky Ridge (V); Perkasie (B); Solliday's Island (F); Turkey Hill (L); Bristol (Dr).

Panicum Lindheimeri Nash., var. **fasciculatum** (Torr.) Fernald.

(A combination of *P. huachucae* Ashe and *P. tennesseense* Ashe. Rhodora, xxiii. 223 (1921). Probably includes *P. unciphyllum* of Fretz's Flora.)

Dry or damp open ground or borders of woods; common.

Kintnersville (Dr); Revere (V) (L); Applebachville (L); Shelly (F); Rockhill (F); Rocky Ridge (V); Trumbauersville (B); Argus (B) (F); Perkasie (F); Sellersville (B); Farm School (B); Neshaminy (Mc); Buckingham (Dr); Bycot (K); Carversville (L); Washington's Crossing (Dr); Morrisville (Dr); Tullytown (F).

All the *P. tennesseense* of Gray's Man., ed. 7, found in the Bucks County series is referable to this variety. Much of the

P. tennesseense material found in New York and New England comes under *P. Lindheimeri* Nash, var. *septentrionale* Fernald, but this variety has not been detected in our area. Our so-called *P. tennesseense* is probably only a shade form.

[Panicum lanuginosum Ell.

A Coastal Plain species reported from Rockhill by Fretz. The material on which this record was based is *P. Lindheimeri,* var. *fasciculatum* (Torr.) Fernald.]

Panicum longiligulatum Nash.

Cont. U. S. Nat. Herb. xv, 207–208 (1910).

A single specimen collected at Bristol (Dr) on old gravel workings, Sept. 14, 1924, has been identified as this species by Agnes Chase. This has been described as a southern species and seems very far out of its range in Bucks County. The same locality was visited by Bayard Long and the writer on July 1, 1931, and July 13, 1931, and additional material was collected on both dates.

Panicum albemarlense Ashe.

Cont. U. S. Nat. Herb. xv, 212 (1910).

Moist sandy woods or open grounds; rare.

Woodbourne (J); Yardley (L); Roelofs (L).

Panicum sphaerocarpon Ell.

Dry sandy and gravelly situations; frequent.

Passer (Wi); Brick Tavern (Ha); Rockhill (B); Argus (F); Point Pleasant (L); Buckingham (L); Turkey Hill (L); Tullytown (F); Bristol (B).

Panicum polyanthes Schultes.

Moist soil; rare.

Ringing Rocks (R–R); Fallsington (L); Tullytown (F).

This species approaches its northern limits in Bucks County.

[Panicum commutatum Schultes.

Reported in Fretz's Flora from Rockhill. No herbarium material found to cover this record.]

Panicum Ashei Pearson.

Dry, mostly rocky woods; not common.

Lumberville (L); Lahaska (L); Buckingham (L); Jericho Hill (L).

Panicum Scribnerianum Nash.

Dry or moist soil in open woods, fallow fields and roadsides; infrequent or local.

Nockamixon (R–R); Solidays Island (F); Carversville (L); Point Pleasant (L); Lahaska (L); Brownsburg (L); Washington's Crossing (Dr); Morrisville (Kr); Tullytown (B).

[Panicum xanthophysum Gray.

A northern variety reported from Tullytown by Porter. No material has been found to verify this record, therefore the species is excluded.]

Panicum clandestinum L.

(Includes *P. decoloratum* Nash.)

Moist places and thickets; rather frequent.

Monroe (R–R); Rockhill (K); Rocky Ridge (W); Perkasie (F); Argus (F); Turkey Hill (L); Tullytown (K); Bristol (F).

Panicum Boscii Poir.

(*P. Porterianum* Nash.)

Dry woods and thickets; rather local.

Monroe (R–R); Revere (W); Rockhill (V) (F) (J); Argus (F); Bristol (F).

Panicum Boscii Poir., var. **molle** (Vasey) Hitchc. & Chase.

(*P. pubifolium* Nash.)

Same habitat and frequency as species.

Riegelsville (R–R); Narrowsville (L); Carversville (L); Buckingham (L); Brownsburg (L); (Durham).

Panicum latifolium L.

(*P. macrocarpon* Le Conte.)

Dry or moist open woods or thickets; rather local.

Rockhill (K) (F); Deep Run, near Tohickon Park (F); New Britain (B).

***Echinochola crusgalli** (L.) Beauv. BARNYARD GRASS.

(*E. Crusgalli,* in part, of Fretz's Flora.)

Fields, barnyards and waste places; common.

Brownsburg (L); Yardley (L); Morrisville (L); Bristol (B); Andalusia (Dr).

Echinochloa muricata (Michx.) Fernald.

(*E. Crusgalli,* in part, of Fretz's Flora.) Rhodora, xxiii. 57 (1921).

Alluvial meadows and other low ground; frequent.

Monroe (R–R); Ottsville (L); Haycock Mountain (B); Shelly (B); Telford (B); Lumberville (L); Brownsburg (L); Washington's Crossing (Me); Yardley (L); Morrisville (L); Turkey Hill (B).

Setaria geniculata Beauv.

(*S. imberbis* of Gray's Manual, ed. 7.)

Moist soil; frequent.

Pleasant Valley (B); Quakertown (B); Sellersville (F); Buckingham (L); Morrisville (B); Penns Manor (B); Bristol (L).

According to Hitchcock, Contr. U. S. Nat. Herb., xxii, 168 (1920), our plant is inseparable from the widely distributed tropical *S. geniculata.*

***Setaria lutescens** (Weigel) Hub. FOXTAIL GRASS.

(*S. glauca* of Gray's Manual, ed. 7.) Rhodora, xviii, 232 (1916).

Naturalized in cultivated ground and waste places; frequent.

Monroe (R–R); Telford (B); Point Pleasant (L); Neshaminy (Mc); Washington's Crossing (Me); Yardley (Me).

***Setaria verticillata** (L.) Beauv.

Naturalized about dwellings and in waste places, infrequent.

Sellersville (F); Bristol (B); (Bensalem Township).

***Setaria viridis** (L.) Beauv. GREEN FOXTAIL GRASS.

Established in cultivated soil, about dwellings and in waste places; frequent.

Sellersville (F); Telford (B); Bristol (L).

***Setaria italica** (L.) Beauv. MILLET.

Escaped from cultivation and established in fields and waste places; occasional.

Perkasie (F, July, 1881, and August 30, 1898).

[Cenchrus tribuloides L.

This grass occurs in sand along the seacoast and was erroneously reported from Bucks County by Fretz.]

Cenchrus pauciflorus Benth. SANDBUR.

(*C. carolinianus* Walt. of Gray's Manual, ed. 7, in part.) Contr. U. S. Nat. Herb. xxii, pt. 1, 67 (1920).

Dry sandy open soil; rare.

Monroe (R–R); Kintnersville (R–R); Penn Valley (B).

***Miscanthus sinensis** Anderss.

A native of the Far East often found in cultivation; rare as an escape.

Morrisville (Dr, September 28, 1924).

Erianthus saccharoides Michx.

Moist ground; rare.

Andalusia (Ma, September, 1864.)

In Fretz's Flora this specimen is quoted under *E. compactus* which is here not regarded as specifically distinct.

Andropogon scoparius Michx. BEARD GRASS.

Old fields, roadsides and thickets; locally abundant but rarely collected.

Monroe (R–R); Ottsville (L); Sellersville (F); Lumberville (L).

Andropogon glomeratus (Walt.) BSP.

Moist sandy soil of Coastal Plain; local.

Fallsington (L, September 3, 1931); Bristol (F, October 14, 1898).

Andropogon virginicus L.

Dry or moist open ground; frequent.

Monroe (R–R); Sellersville (F); Roelofs (L); Morrisville (Dr); Tullytown (F); Bristol (F); (Quakertown); (Upper Makefield Township).

Andropogon furcatus Muhl.

Dry or moist open usually sandy soil; frequent.

Monroe (R–R); Argus (K); Sellersville (F); Telford (B); Plumsteadville (Dr); Point Pleasant (L); Bridge Valley (Dr); Brownsburg (B).

Sorghastrum nutans (L.) Nash.

Dry open soil; frequent.

Monroe (R–R); Finland (L); Almont (L); Sellersville (F); Point Pleasant (L); Neshaminy (Me); Emilie (Dr).

[**Sorghum halapense** (L.) Pers.

Reported from Bucks County by Dr. Porter but no material has been found to cover his record.]

CYPERACEAE (SEDGE FAMILY)

Cyperus flavescens L.

Damp soil; not rare.

Kintnersville (R–R); Pleasant Valley (B); Finland (B); Turkey Hill (B); Andalusia (Ma).

Cyperus diandrus Torr.

Low sandy or mucky soil, and in meadows; frequent.

Quakertown (Bl–G); Sellersville (F); Point Pleasant (F); Lumberville (L); Brownsburg (L); Tullytown (Dr).

Cyperus rivularis Kunth.

Damp shores and meadows; frequent.

Riegelsville (L); Ottsville (B); Pleasant Valley (B); Rockhill (Br); Sellersville (F); Telford (B); Chalfont (L); Lumberville (L); Brownsburg (L); Holland (B); Yardley (L); Morrisville (L); Tullytown (L); Bristol (Dr); Andalusia (L).

Cyperus aristatus Rottb.

Gravelly or muddy shores; known only along the Delaware River.

Monroe (R–R); Point Pleasant (B)(F); Lumberville (L); Brownsburg (L); Washington's Crossing (L); Yardley (L); Morrisville (L).

Cyperus dentatus Torr.

Sandy shores along the Delaware River; locally abundant.

Wyker's Island (R); Point Pleasant (B)(L)(F); Lumberville (L); Yardley (Me); Bristol (F); Andalusia (L); (Durham).

Cyperus esculentus L. YELLOW NUT GRASS.

Low open soil, often in cultivated fields; common.

Monroe (R–R); Plumsteadville (F); Point Pleasant (L); Brownsburg (L); Washington's Crossing (Me); Yardley (L).

Cyperus strigosus L.

Low open soil near streams; common.

Riegelsville (L); Pleasant Valley (B); Sellersville (F); Telford (B); Edison (Bt); Neshaminy (Mc); Langhorne (L); Point Pleasant (L); Center Bridge (L); Brownsburg (L); Washington's Crossing (L); Yardley (L); Morrisville (Dr); Bristol (F); Penns Manor (B); Eddington (B).

C. strigosus, var. *robustior* Kunth. is included with the species. The Bristol specimen was placed under this variety by Fretz. A slight difference in the length of the spikelet is scarcely sufficient difference to give it varietal rank.

Cyperus lancastriensis Porter.

Low open soil; rare.

Tullytown (F, September 16, 1898).

Cyperus ovularis (Michx.) Torr.

Sandy, often rather dry soil; not common.

Buckingham (L); Brownsburg (B); Morrisville (L); Tullytown (F).

Cyperus filiculmis Vahl.

Dry sterile soil, sometimes on ballast; rare.

Quakertown (Bl); Point Pleasant (F); (New Hope); (Malta Island).

Cyperus filiculmis Vahl., var. **macilentus** Fernald.

Same habitat as species; more frequent on the Coastal Plain.

Morrisville (B); Turkey Hill (B); Tullytown (B); Bristol (B); Andalusia (Dr).

Dulichium arundinaceum (L.) Britton.

Bogs, shallow ponds and shores; locally abundant.

Monroe (R–R); Revere (R–R); Finland (L); Weisel (B); Morrisville (B); Tullytown (Dr); Bristol (St).

Eleocharis olivacea Torr.

Muddy shores and boggy places; rare.

Morrisville (Dr); Tullytown (B); Bristol (Dr).

Eleocharis diandra C. Wright.

Sandy or muddy shores; rare and local on the tidal mud flats along the Delaware River in the lower end of the County.

Tullytown (L) (B); Andalusia (L).

Elocharis obtusa (Willd.) Schultes. Spike Rush.

Wet soil; common throughout.

Monroe (R–R); Brick Tavern (Ha); Telford (B); Plumstead (Ma); Point Pleasant (L); Brownsburg (B); Yardley (Dr); Morrisville (Dr); Bristol (B) (F) (Dr).

Elocharis Engelmanni Steud.

Wet ground and muddy shores; local and not very plentiful.

Nockamixon (R–R); Perkasie (F); Sellersville (F); Bristol (Dr) (Bo).

Elocharis palustris (L.) R. & S.

Wet grassy places or in water; occasional.

Perkasie (F); Tullytown (Dr).

Distinguished from the next by its elongate tubercles which are much longer than broad; achenes are 1.2–2.1 mm. long, narrowly obovoid or pyriform; stem terete.

Eleocharis Smallii Britton.

(*E. palustris,* var. *glaucescens* of Gray's Manual, ed. 7.)

Similar situations as preceding species occasional.

Rockhill (P); Sellersville (V).

Tubercles are depressed-deltoid, or broad-ovate, as broad or broader than long achenes 1.2–1.6 mm. long, roundish or obovoid; culms wiry, subterete.

Eleocharis acicularis (L.) R. & S.

Ditches and muddy shores; common.

Monroe (R–R); Point Pleasant (B); Yardley (L); Tullytown (Dr); Edgely (B).

Eleocharis capitata (L.) R. Br.

(*E. tenuis* of Gray's Manual, ed. 7, and Fretz's Flora. Includes *E. acuminata* of Fretz's Flora.) Rhodora, xx. 24 (1918).

Wet open soil; frequent.

Buckwampum Mountain (R–R); Brick Tavern (Ha); Finland (F); Rockhill (M) (F); Sellersville (F); Neshaminy (Mc).

Eleocharis intermedia (Muhl.) Schultes.

Wet shores; rare.

Point Pleasant (F, September 4, 1899); Eddington (L).

Stenophyllus capillaris (L.) Britton.

Sandy soil and ballast; frequent.

Monroe (R–R); Sellersville (F); Derstine Station (B); Yardley (L); Bristol (B).

Fimbristylis mucronulata (Michx.) Blake.

(*F. autumnalis* of Gray's Manual, ed. 7.) Rhodora, xx. 24–25 (1918).

Low moist soil; frequent.

Bursonville (R–R); Finland (L); Sellersville (B); Point Pleasant (B); Brownsburg (L); Yardley (Dr); Oxford Valley (B).

Scirpus planifolius Muhl.

Dry open woodlands; frequent.

Monroe (R–R); Nockamixon (M); Ottsville (L); Sundale (L); Milford Square (L); Spinnerstown (L); Rockhill (F); New Britain (Gr); Brownsburg (L); Rushland (V).

Scripus debilis Pursh.

Wet meadows and shores; rare.

Perkasie (B); Plumstead (F).

Scirpus Smithii Gray.

Tidal mud flats; infrequent.

Tullytown (L); Andalusia (?).

Scirpus Smithii Gray, var. **setosus** Fernald.

Inland swamps but not on tidal shores; rare.

Morrisville (Dr, September 13, 1925).

Scirpus americanus Pers.

Swamps, marshes and moist shores; probably more common and general in its distribution than the following collections would suggest.

Point Pleasant (P); Washington's Crossing (L); Yardley (L); Tullytown (B); Bristol, on tidal mud (Dr); Andalusia (L).

Scirpus validus Vahl. GREAT BULRUSH.

(*S. lacustris* L. of Fretz's Flora.)

Margins of ponds and streams, also in marshes; frequent.

Monroe (R–R); Argus (F); Grenoble (L); Bristol (B); (Sellersville).

Scirpus rubrotinctus Fernald.

Damp or marshy soil; rare.

Morrisville (L); Tullytown (F)(J).

Scirpus sylvaticus L.

Swamps and shores of ponds and streams; infrequent.

Monroe (R); Durham Township (F); Kintnersville (Dr).

Scirpus atrovirens Muhl.

Meadows, swamps and ditches; could probably be found more generally.

Monroe (R–R); Shelly (F); Rockhill (F); Neshaminy (Mc); Bristol (B).

Scirpus atrovirens Muhl., var. **georgianus** (Harper) Fernald.

(*S. georgianus* Harper.) Rhodora, xxiii. 134 (1921).

Similar situations as species, or somewhat drier ones; not frequent.

Telford (Sm); Doylestown (B); Penns Manor (B).

Scirpus polyphyllus Vahl.

Swampy ground; rare and local.

Monroe (R–R); Brick Tavern (Ha); Yardley (L).

Scirpus lineatus Michx.

Roadsides and damp fields; rare and local.

Rocky Ridge (B); Almont (L); Argus (F); Telford (B); Fallsington (B).

This species was not listed in Fretz's Flora. It has a wide and scattered distribution occurring usually in moist calcareous soil. Locally it appears to be of comparatively recent introduction. The earliest specimen in the collection of the Philadelphia Botanical Club was collected in southern New Jersey in 1908. The earliest specimen from Bucks County is dated 1915 and it is noteworthy that almost all of the Bucks County material was collected along roadsides.

Scirpus cyperinus (L.) Kunth. Wool Grass.

Marshy places; common.

Monroe (R); Revere (L); Haycock Mountain (Mc); Shelly (B); Quakertown (Pr)(F); Rockhill (F); Lumberville (B); Morrisville (Dr); Tullytown (Dr); Bristol (B); Andalusia (B).

Scirpus Cyperinus (L.) Kunth, var. **pelius** Fernald.

A variety which is typically northern; rare.

Monroe (R, July 30, 1884).

Several of the specimens from the upper districts listed under the typical species may be regarded as approaching this variety.

Scirpus Eriophorum Michx.

Swamps and marshes; frequent on Coastal Plain.

Yardley (Me); Morrisville (L); Fallsington (L); Tullytown (Dr); Bristol (Dr).

Eriophorum gracile Roth. Cotton Grass.

Bogs and swamps; frequent in northern districts, absent on Coastal Plain.

Nockamixon (M)(P); Narrowsville (Bn)(Li); Pleasant Valley (L); Quakertown (Bn); Rockhill (M)(V); Sellersville (Ma); Argus (C).

Eriophorum virginicum L. Wool Grass.

Swamps; rare.

Penn Valley (F, August 7, 1897).

[**Hemicarpha micrantha** (Vahl.) Britton.

Reported from Point Pleasant in Fretz's Flora but no material was found to cover this record.]

Rynchospora cymosa Ell.

Low ground; rare and local.

Tullytown (Sa, September 25, 1897); Bristol (D, August 5, 1866).

Rynchospora alba (L.) Vahl.

Boggy soil; rare.

Pleasant Valley (B); Finland (L); (Penn Valley).

Rynchospora capitellata (Michx.) Vahl. Beak Rush.

(*R. glomerata* of Gray's Manual, ed. 7.) Rhodora, xx. 27 (1918).

Meadows, swamps and bogs; frequent.

Monroe (R–R); Pleasant Valley (B); Finland (L); Sellersville (B); Roelofs (L); Morrisville (B); Turkey Hill (B); Fallsington (L); Tullytown (M)(F); Bristol (C); (Rockhill).

This species has the bristles of the perianth densely and retrorsely barbed.

Rynchospora glomerata (L.) Wahl. is now applied to *R. glomerata* var. *paniculata* (Gray) Champ., a more southern form which does not occur in our area.

Rynchospera capitellata (Michx.) Vahl., var. **controversa** Blake.

(*R. Smallii* Britton.) Rhodora, xx. 28 (1918).

Bogs; rare. Bristol (D, August 5, 1866).

This variety has the bristles of the perianth upwardly barbed.

Scleria triglomerata Michx.

Moist thickets and meadows; rare.

Rockhill (M)(K); (Nockamixon).

Scleria pauciflora Muhl.

Dry open situations; rare and local above the fall line.

Monroe (R); Finland (L).

Scleria setacea Poïr.

(Includes *S. reticularis,* var. *pubescens* Britton and *S. Torreyana* Walp. of Fretz's Flora.)

On the Coastal Plain; rare.

Tullytown (F) (V) (Sa); (Bristol).

Carex* retroflexa Muhl.

Dry open chiefly rocky woods and thickets; frequent in upper end, apparently absent on the Coastal Plain.

Cauffman's Hill (L); Ottsville (L); Wormansville (L); Finland (L); Rockhill Township (F); Argus (L).

Carex convoluta Mackenzie.

(*C. rosea* of Gray's Manual, ed. 7, and of Fretz's Flora, in part.) Bul. Torr. Bot. Club, xliii. 423 (1916).

Dry banks, woods and thickets; frequent except on Coastal Plain.

Monroe (R–R); Revere (L); Ottsville (L); Springtown (We); Shelly (F); Quakertown (F); Spinnerstown (L); Finland (L); Rockhill (B) (Sa) (K); Doylestown (Dr); Lahaska (L); Aquetong (Wi).

Distinguished by its stout habit; short, stout, curved stigmas and wide leaves (2–3 mm.).

Carex rosea Schk.

(*C. rosea,* var. *radiata* of Fretz's Flora, in part.) Bul. Torr. Bot. Club, xliii. 423 (1916).

Damp grassy woods and thickets, also around swamps; widely distributed and frequent.

Durham (We); Nockamixon (R–R); Upper Black Eddy (Tr–P); Quakertown (F); Milford Square (L); Spinnertown (L); Rockhill (B); Sellersville (F); Edison (Fo); Neshaminy (Me); Aquetong (Wi); Buckingham Valley (B); Yardley (L); Penn Valley (C); Roelofs (L).

Known by its slender habit and long straight stigmas. Fruits earlier than the next.

* The treatment of the genus Carex is according to Kenneth K. Mackenzie as found in his various papers. All of the matarial in the herbarium of the Philadelphia Botanical Club quoted in this work, except some of the most recent, was critically examined and determinations verified by Mr. Mackenzie.

Carex radiata (Wahl.) Small.

(*C. rosea,* var.*radiata* of Fretz's Flora, in part.) Bul. Torr. Bot. Club, xliii. 423 (1916).

Moist woods and thickets; rare.

Woods, Nockamixon (M, May 28, 1893); (Argus); (Sellersville).

An Alleghanian form of slender habit with somewhat twisted stigmas.

Carex aggregata Mackenzie.

Bul. Torr. Bot. Club, xxxvii. 246 (1910). Torreya, xvi. 131–136 (1916).

Alluvial bank; rare. Morrisville (L, June 13, 1919).

A well marked austral species between *C. Muhlenbergii* and *C. cepholoidea.* It was previously confused with *C. cepholoidea* from which it may be distinguished by its scales which equal or exceed the length of the perigynia body whereas in *C. cephaloidea* they are less than half the length of the perigynia body. The sheaths of *C. aggregata* are rounded at the throat, thickened and reddish brown tinged whereas in *C. cephaloidea* the sheaths are truncate at the throat, not thickened and not reddish brown tinged.

Carex Muhlenbergii Schkuhr.

Dry thickets, fields and hillsides; throughout the County.

Upper Black Eddy (Tr–P); Rockhill Township (F); Bycot (K); Brownsburg (L); Turkey Hill (L); (Sellersville).

Carex plana Mackenzie.

(*C. Muhlenbergii* Schk., var. *enervis* Boott. *C. Muhlenbergii xalapensis* (Kunth) Britton of Fretz's Flora.) Bul. Torr. Bot. Club, l. 349–353 (1923).

Dry woods in heavier and richer soil than *C. Muhlenbergii* but not necessarily in calcareous soil; rare.

Narrowsville (L); Rockhill Township (F); (Point Pleasant).

Differs from *C. Muhlenbergii* in that the periginia are nerveless (with fewer dorsal ribs); narrower and smaller in size.

Carex cephalophora Muhl.

Dry banks, fields and open woods; common.

Durham (R–R); Nockamixon (M); Erwinna (Tr–P); Ottsville (L); Rockhill (Br); Sellersville (F); Aquetong (K); Lahaska (L); Buckmanville (L); Penn Valley (C).

Carex sparganioides Muhl.

Rich wooded slopes and thickets; frequent except on Coastal Plain.

Monroe (R–R); Nockamixon (P)(H); Upper Black Eddy (Pr); Ottsville (L); Quakertown (F); Rockhill Township (F); Sellersville (F)(J)(C); Pipersville (F); Tohickon Park (F); Point Pleasant (L); Buckingham (L).

Carex cephaloidea Dewey.

Damp, rather rich, woods and thickets; rare and local.

Nockamixon (H); Upper Black Eddy (Pr); (Rockhill).

Carex conjuncta Boott.

Moist thickets, banks and meadows; rare and local.

Kintnersville (Pr); Carversville (L); Morrisville (L); Slickville (L).

Carex vulpinoidea Michx.

Bogs and wet meadows; common.

Monroe (R–R); Upper Black Eddy (Tr–P); Haycock Mountain (Tr–P); Rockhill (L); Sellersville (Dr); Telford (B); Bycot (K); Tullytown (K).

Carex annectens Bicknell.

(*C. setacea* Dewey, var. *ambigua* (Barratt) Fernald. *C. xanthocarpa annectens* Bicknell of Fretz's Flora.) Rhodora, xxiv. 73–74 (1922).

Somewhat dry fields, meadows and woods; frequent.

Upper Black Eddy (Fo); Richlandtown (L); Brick Tavern (Ha); Rockhill (C); Perkasie (F); Sellersville (F); Neshaminy (Mc); Penn Valley (C); Tullytown (F); Bristol (F).

Carex brachyglossa Mackenzie.

(*C. xanthocarpa* Bicknell of Fretz's Flora.) Bul. Torr. Bot. Club, l. 355 (1923).

Similar situations as preceding; somewhat less frequent.

Revere (L); Shelly (F); Argus (F); Sellersville (P); Telford (B).

This species approaches *C. annectens* Bicknell but is well separated from it. In this species the inflorescence is shorter and thicker; perigynia not over 2.6 mm. long, the wall essentially nerveless and break very short and less plainly notched than in *C. annectens.*

Carex stipata Muhl.

Swamps and wet meadows; common.

Monroe (R–R); Nockamixon (M); Ottsville (L); Pleasant Valley (L); Richlandtown (L); Quakertown (L); Trumbauersville (F); Sellersville (F); Telford (B); Edison (Fo); Tullytown (C); Bristol (Dr).

Carex uberior (Mohr.) Mackenzie.

Bartonia, x. 38 (1929).

Wet places; rare. Emilie (L, June 23, 1927).

A segregate from *C. stipata* having a wide southern distribution. It is more robust, with greater stature, broader leaves, larger spikes and longer perigynia.

Carex laevivaginata (Kükenth.) Mackenzie.

Rhodora, xvii. 231 (1921).

Swamps and wet meadows; not rare.

Pleasant Valley (L); Finland (L); Milford Square (L); Edison (Fo); Yardley (L); Emilie (L).

A segregate from *C. stipata* having the hyaline part of leaf sheath thickened at orifice and commonly smooth while in *C. stipata* the leaf sheath is not thickened at the orifice and it is usually transversely rugose. The periginium is 5–7 mm. long whereas in *C. stipata* it is only 4 mm. long.

Carex canescens L.

Swamps and bogs; rare and local.

Emilie (L); Tullytown (C); Oxford Valley (L); (Glen Lake); (Bristol); (Andalusia).

Carex bromoides Schkuhr.

Wet meadows and swamps; rather frequent except on Coastal Plain.

Milford Square (L); Spinnerstown (L); Quakertown (C); Rockhill (F) (C); Sellersville (P).

Carex interior Bailey.

(*C. scirpoides* of Gray's Manual, ed. 7.)

Boggy meadows: locally abundant in upper end.

Pleasant Valley (L); Passer (L); Spinnerstown (L); Finland (L).

There are records of this sedge occurring at Rockhill and Argus. The Argus record is based on material which proves to be *C. incomperta* and the Rockhill record may mean Rockhill Township, as is the case with some of Fretz's records. In this case it is likely that the record is based on a specimen of *C. incomperta* originally labelled *C. interior* from Sellersville.

Carex Howeii Mackenzie.

(*C. sciripoides* Schkuhr., var. *capillacea* (Bailey) Fernald.) Bul. Torr. Bot. Club, xxxvii. 245 (1910).

Swamps and bogs; rare.

Fallsington (L, July 16, 1932); Bristol (L, May 24, 1930).

Carex sterilis Willd.

(*C. scirpoides* Schkuhr.) Rhodora, xxiii. 96 (1921).

Wet open woods and marshy places rare.

Pleasant Valley (L, June 9, 1923).

This species frequently produces much dioecious material in a colony. It is a widely distributed species of limestone regions, especially northward.

Carex seorsa E. C. Howe.

(*Carex rosaeoides* E. C. Howe.)

Wet woods and swamps; rare.

Fallsington (L); Emilie (L); Bristol (B).

[Carex altantica Bailey.

(*C. sterilis* of Gray's Manual, ed. 7, in part.)

A Coastal Plain species not known from Bucks County.

Material forming basis of the Tullytown record proves to be *C. cephalantha.*]

Carex incomperta Bicknell.

(*C. sterilis* of Gray's Manual, ed. 7, in part.) Bul. Torr. Bot. Club, xxxv. 494 (1909).

Boggy places; frequent.

Durham (R–R); Cauffman's Hill (L); Ottsville (L); Pleasant Valley (L); Finland (L); Milford Square (L); Rockhill (L); Argus (F); Sellersville (F); Yardley (L); Turkey Hill (L); Emilie (L).

Carex angustior Mackenzie.

(*C. stellulata* Good, var. *angustata* Carey.) Rydberg, Rocky Mt. Fl, 124 (1917).

Boggy meadows; rare and local.

Pleasant Valley (B); Spinnerstown (L); Finland (L); Yardley (L).

Carex cephalantha (Bailey) Bicknell.

(*C. stellulata* Good, var. *cephalantha* (Bailey) Fernald.) Bul. Torr. Bot. Club, xxxv. 493 (1908).

Marshes, swamps or moist woods; local.

Finland (L); Almont (L); Penn Valley (F); Tullytown (F)(C).

Carex cristatella Britton.

(*C. cristata* Schwein. of Gray's Manual, ed. 7.)

Swales, marshes and wet thickets; occasional.

Upper Black Eddy (Tr–P); Springtown (F); Shelly (F); Sellersville (F); Washington's Crossing (Dr); (Quakertown).

Carex tribuloides Wahlenb.

Meadows, low woods and thickets; frequent.

Upper Black Eddy (Bn); Ridge Valley (F); Sellersville (F); Telford (Sm); Bycot (K); Buckingham (Dr); Turkey Hill (L)(C); Bristol (B).

[Carex Bebbii Olney.

(*C. tribuloides Bebbii* Bailey, of Fretz's Flora.)

This is a northern form reported from Sellersville but there is no material extant to verify the record. Material was probably *C. tribuloides.*]

Carex scoparia Schk.

Moist or dry open places, or woods; common.

Monroe (R–R); Upper Black Eddy (Fo) (Tr–P); Revere (L); Rockhill (M); Telford (B); Gardenville (Tr–P); Turkey Hill (L); Tullytown (K); Bristol (F).

Carex brevior (Dewey) Mackenzie.

(*C. festucacea* Schkuhr., var. *brevior* (Dewey) Fernald.) Bul. Torr. Bot. Club, xlii. 605 (1915).

Dry or moist open woods, thickets and banks, occasional in upper end.

Nockamixon (Si); Upper Black Eddy (Tr–P); Sellersville (F); Telford (Sm).

This is a plant with large perigynia (over 4 mm. long) and has formerly been much confused with *C. festucacea* Schkuhr.

Carex normalis Mackenzie.

(*C. mirabilis* Dewey. *C. straminea mirabilis* (Dewey) Tuckerm. of Fretz's Flora.) Bul. Torr. Bot. Club, xxxvii. 244 (1910).

Dry open woods and banks; locally abundant but rarely on Coastal Plain.

Monroe (R); Nockamixon (H); Upper Black Eddy (Pr); Pleasant Valley (L); Spinnerstown (L); Sellerstown (F) (C); Morrisville (L).

[Carex foenea Willd.

Reported from Penn Valley and Tullytown but the material forming the basis for these records was misidentified. True *C. foenea* is unknown in Bucks County.]

Carex festucacea Schkuhr.

Dry or moist, sometimes rocky soil; not rare.

Riegelsville (R–R); Quakertown (F); Milford Square (L); Rockhill (F); Argus (L); Sellersville (P)(C); Telford (Sm); Andalusia (L); (Penn Valley).

A record for this sedge from Point Pleasant was based on a specimen of *C. straminea* which was misidentified. Very closely related to *C. straminea* of our present conception but separable by its ovate instead of obovate perigynia and the spikes are cuneate based whereas in *C. straminea* they are rounded.

Carex Richii (Fernald) Mackenzie.

(*C. hormanthodes* Fernald, var. *Richii* Fernald). Bul. Torr. Bot. Club, xlix. 362 (1922).

Swampy meadows; not rare.

Quakertown (Ma); Rockhill (M); Sellersville (F)(C); Penn Valley (C); Tullytown (C); Bristol (L).

An inland relative of the salt marsh sedge *C. hormanthodes* Fernald.

Carex straminea Willd.

Wet soil; frequent especially in lower end.

Point Pleasant (F); Buckingham (Dr); Yardley (L); Tullytown (F); Emilie (L); Andalusia (L).

Confused with *C. tenera* Dewey, a northern species, but separated from it by Mackenzie (Bul. Torr. Bot. Club, xlii. 603–604 (1915).

This is a plant of wet soil, whereas *C. tenera* is a more slender plant of dry soil. The scales of *C. straminea* are hyaline with a conspicuous green stripe on each side of the midvein while in *C. tenera* they are reddish brown tinged and are without the green stripe on each side of the midrib.

No *C. tenera* has been collected in Bucks County so far as herbarium material shows. The old records for *C. tenera,* viz., Quakertown, Sellersville and Langhorne were probably based on misidentified material.

Carex Longii Mackenzie.

(*C. albolutescens* of Gray's Manual, ed. 7, and Keller and Brown's Flora.) Schweinitz's type specimen of *C. albolutescens*

proves to be young *C. straminea,* and *C. Longii* is proposed by Mackenzie. Bul. Torr. Bot. Club, xlix. 372–373 (1922).

Damp or dry soil; rare and local on the Coastal Plain.

Bristol (F)(B)(L); (Nockamixon—This record is based on material which proves to be *C. normalis.*)

Carex alata Torr.

Moist soil; rare.

Tullytown (F, June 24, 1899); (Bristol).

Carex Bicknellii Britton.

Dry soil; rare.

Penn Valley (C, June 8, 1894).

Carex Jamesii Schwein.

Dry woods or thickets; rare.

Ottsville (L, May 30, 1925).

Carex Willdenowii Schkuhr.

Dry banks, wooded slopes and thicket; common in upper end.

Monroe (R–R); Nockamixon (P); Narrowsville (L); Sundale (L); Richlandtown (L); Quakertown (F); Shelly (B); Milford Square (L); Spinnerstown (L); Rockhill (Fa)(Sa); Argus (C); Buckingham (L); (Sellersville).

Carex leptalea Wahl.

Bogs and swamps; not rare.

Cauffman's Hill (L); Buckwampum Mountain (R–R); Pleasant Valley (B); Finland (L); Rockhill (F)(V); Yardley (L); Emilie (L).

Carex nigro-marginata Schwein.

Dry sandy or rocky soil; rare.

Monroe (R, May, 1886).

This probably covers the old Durham [Twp.] record.

Carex pennsylvanica Lam.

Dry open soil and open woods; common.

Monroe (R–R); Ottsville (L); Milford Square (Pr); Trumbauersville (L); Perkasie (F); Telford (B); Erwinna (L);

Point Pleasant (Fo); Warrington (L); Buckmanville (L); Dolington (L).

Carex pennsylvanica Lam., var. **lucorum** (Willd.) Fernald.

Dry rocky wooded cliff, New Hope (Sg, April 22, 1914).

Carex albicans Willd.

Open woods and banks; infrequent.

Brownsburg (B); Langhorne (B); Tullytown (F)(C); Bristol (Dr).

Carex varia Muhl.

Banks and open dry woods; common.

Monroe (R–R); Nockamixon (C); Cauffman's Hill (L); Ottsville (L); Pleasant Valley (A); Finland (L); Milford Square (L); Spinnerstown (L); Perkasie (F); Sellersville (F); Pipersville (L); Warrington (L); (Argus).

The Milford Square (L) specimen is the dark-scaled form (forma *colorata* (Bailey) Küken).

Carex communis Bailey.

(Includes *C. pedicellata* of Fretz's Flora.)

Dry banks and open woods; common except on Coastal Plain.

Durham (F); Monroe (L); Nockamixon (Pr); Sundale (L); Ottsville (L); Tohickon (L); Milford Square (L); Perkasie (F); Pipersville (L); Point Pleasant (F); New Hope (Sg); (Rockhill Township).

Carex umbellata Schkuhr.

(*C. umbellata* Schkuhr., var. *brevirostris* Boott. *C. abdita* Bicknell). Bul. Torr. Bot. Club, xlii. 621 (1915).

Dry sandy or rocky banks and hillsides; moderately abundant.

Durham (L); Ottsville (L); Pipersville (L); Warrington (L); Furlong (L); Aquetong (L); Jericho Hill, near Brownsburg (L); Fallsington (Dr); (Nockamixon); (Argus); (Penn Valley).

Carex rugosperma Mackenzie.

(*C. umbellata* of Gray's Manual, ed. 7.) Bul. Torr. Bot. Club, xlii. 621 (1915).

Dry, mostly sandy or rocky soil; not common.

Durham (L); Buckwampum Mountain (L); Narrowsville (P); Lahaska (L).

This is the plant with the long beak.

Carex tonsa (Fernald) Bicknell.

(*C. umbellata* Schkuhr., var. *tonsa* Fernald.) Bul. Torr. Bot. Club, xxxv. 492 (1908).

Dry sandy soil; rare.

Aquetong (L, April 27, 1930); Penn Valley (C, June 1, 1899).

Carex hirtifolia Mackenzie.

(*C. pubescens* Muhl.) Bul. Torr. Bot. Club, xxxvii. 244 (1910).

Woods and thickets; occasional in upper end.

Monroe (R–R); Ottsville (L); Quakertown (F) (Bn) (C); Milford Square (L); Argus (C); Rockhill (C); Three Mile Run (F); Point Pleasant (L); (Penn Valley).

Carex pedunculata Muhl.

Dry or moist, rich woods; occasional in upper and middle districts.

Ottsville (L); Erwinna (L); Pipersville (L); Point Pleasant (L); (Quakertown).

Carex tetanica Schkuhr.

Meadows and wet woods; uncommon.

Rockhill (C) (F); (Argus).

Carex Meadii Dewey.

(*C. tetanica* Schkuhr., var. *Meadii* (Dewey) Bailey.)

Swamps and wet meadows; locally abundant.

Quakertown (Bn); Rockhill (C); Perkasie (V); Argus (F); Sellersville (F) (P); Bedminster (F).

[Carex polymorpha Muhl.

A sedge coming in our range and very local in its occurrence. Reported from Nockamixon (H) but no material from this County has been located.]

Carex plantaginea Lam.

Moist open woods and rich wooded slopes; locally abundant along the cliffs of the Delaware.

Narrowsville (P) (W); Nockamixon (P) (Pr) (V) (H); Point Pleasant (L).

Carex platyphylla Carey.

Dry wooded slopes and thickets; frequent except on Coastal Plain.

Monroe (L); Kintnersville (T); Nockamixon (H) (P); Narrowsville (Br); Upper Black Eddy (Bn); Sundale (L); Ottsville (L); Tohickon (L); Pipersville (L); Point Pleasant (L); Brownsburg (L); New Hope (Sg); (Haycock).

Carex abscondita Steud.

(*C. ptychocarpa* Steud.)

Low woods of the lower districts; local.

Penn Valley (F) (C); Bristol (F) (C); Langhorne (B); Roelofs (L); Tullytown (L); Andalusia (L); (Quakertown); (Glen Lake).

Carex digitalis Willd.

Woods and thickets; frequent except on Coastal Plain.

Monroe (R–R); Cauffman's Hill (L); Upper Black Eddy (Tr–P); Revere (V); Pleasant Valley (L); Spinnerstown (L); Rockhill (C) (F); Argus (C); Lahaska (L); Buckmanville (L); Bensalem Township, $1\frac{3}{4}$ miles southwest of Hulmeville (B).

Carex laxiculmis Schwein.

Rich woods and thickets; rare on Coastal Plain, frequent elsewhere.

Narrowsville (B); Pleasant Valley (L); Finland (L); Spinnerstown (L); Rockhill (C); Rockhill Township (F); Argus (F); Langhorne (B); Tullytown (C); (Woodburne); (Penn Valley).

Carex albursina Sheldon.

(*C. laxiflora* Lam., var. *latifolia* Boott.) Rhodora, xxiv. 189 (1922).

Rich woods; rare and local.

Kintnersville (P); Narrowsville (Li); Nockamixon (C) (P); Sundale (L); (Rockhill); (Sellersville).

Carex blanda Dewey.

(*C. laxiflora* Lam., var. *varians* Bailey and *C. laxiflora* Lam., var. *blanda* (Dewey) Boott.) Rhodora, xxiv. 189 (1922).

Roadsides, banks and thickets; rare on Coastal Plain, common elsewhere.

Durham (R–R); Nockamixon (M); Ottsville (L); Pleasant Valley (L); Milford Square (L); Finland (L); Quakertown (B); Sellersville (F); Blooming Glen (B); Point Pleasant (B); Gardenville (Tr–P); Buckingham Valley (B); Hartsville (Dr); Center Bridge (B); Andalusia (L); (Rockhill).

Carex leptonervia Fernald.

Boggy swales, moist open woods and thickets; rare.

Boggy swale, 1½ miles northwest of Pleasant Valley (L, June 9, 1923).

A northern sedge closely related to *C. blanda* and distinguished by its almost nerveless perigynia and its strongly retrorsely serrulate bract-sheaths. (Rhodora, xxiv. 189 (1922).)

This material apparently corresponds to material collected a few miles from this station in Lehigh County in a similar habitat and identified as *C. leptonervia* by Mr. Kenneth K. Mackenzie.

Carex heterosperma Wahl.

(*C. anceps* of authors. *C. laxiflora patulifolia* of Fretz's Flora and Gray's Manual, ed. 7.)

Woods, meadows and thickets; common.

Monroe (R–R); Narrowsville (Br) (Li) (Se); Upper Black Eddy (Bn) (Tr–P); Ottsville (L); Pleasant Valley (L); Quakertown (F) (Bn); Finland (L); Milford Square (Pr); Rockhill (C); Sellersville (F); Blooming Glen (B); Doylestown (Dr); Edison (Fo–P); Aquetong (Wi); Bycot (K); Tullytown (C).

This and the following species are two phases of a plant having a wide distribution and are exceedingly difficult to separate in our range. *C. heterosperma* is the northern phase and *C. laxiflora* is the southern phase.

Carex laxiflora Lam.

Rich low woods; occasional.

Rockhill Township (F); Pipersville (L); Glen Lake (Bn); Bristol (Dr).

A plant more distinctive southward and, according to Mackenzie, it is not the sedge to which most authors have applied this name. In a letter dated October 15, 1930, Mr. K. K. Mackenzie states that "*C. laxiflora* Lam. itself is based upon three different specimens, one from New York, one from Pennsylvania and another from Virginia. It is quite likely that the Virginia material is the plant treated by Boott as *C. laxiflora* Lam., it being the same as *C. striatula* Michx." Boott's treatment is being followed here.

Carex styloflexa Buckley.

(*C. laxiflora* Lam., var. *styloflexa* (Buckley) Boott).

Sellersville (G); Bedminster Township (F); Yardley (L); Penn Valley (C); Emilie (L).

Carex gracilescens Steud.

Syn. Pl. Cyp. 226 (1855).

(*C. laxiflora* of older authors.)

Woods, meadows and thickets; frequent in upper end.

Nockamixon (C); Ottsville (L); Pleasant Valley (L); Milford Square (L); Spinnerstown (L); Finland (L); Trumbauersville (F); Sellersville (F).

Carex Shriveri Britton.

(*C. granularis* var. *Haleana* of Gray's Manual, ed. 7.)

Moist ground; rare.

Nockamixon (R–R, June 1, 1886).

Carex granularis Muhl.

Moist meadows; frequent except on Coastal Plain.

Monroe (R–R); Nockamixon (P); Revere (L); Pleasant Valley (L); Richlandtown (L); Shelley (F); Quakertown (Ca); Rockhill (C) (V) (M); Smoketown (V); Argus (C); Sellersville (P) (F); (Tullytown).

Carex oligocarpa Schkuhr.

Dry to damp woods, thickets and shaded banks; not common.

Sundale (L); Ottsville (L); Haar's Dam, near Sellersville (F) (P) (J).

Carex Hitchcockiana Dewey.

Rich woods and thickets; rare.

Sundale (L); Ottsville (L); Milford Square (Pr); (Nockamixon); (Pencoyd-Bucks County. This record by Fretz is an error. It does not belong in Bucks County).

Carex conoidea Schkuhr.

Meadows; common except on Coastal Plain.

Monroe (P); Nockamixon (M) (C) (H); Narrowsville (Br); Revere (L); Wormansville (L); Pleasant Valley (B); Trumbauersville (F); Spinnerstown (L); Rockhill (V) (M); Rocky Ridge (V); Sellersville (F) (P) (Li); Almont (L); (Quakertown).

Carex grisea Wahlenb.

Dry to damp woods and thickets; common in most districts.

Monroe (R–R); Nockamixon (C) (H); Narrowsville (Br); Ottsville (L); Pleasant Valley (L); Quakertown (F); Milford Square (L); Rockhill (M); Sellersville (F); Telford (Sm); Bycot (B); New Hope (B); Morrisville (L); Hulmeville (B).

Carex amphibola Steud.

(*C. grisea* Wahlenb., var. *angustifolia* Boott.)

Dry to damp woods; occasional.

Milford Square (L); Argus (F); Sellersville (F) (J) (P).

Carex glaucodea Tuckerm.

Borders of woods and open fields and meadows; frequent.

Nockamixon (C) (P); Narrowsville (G); Revere (L); Quakertown (F) (C); Finland (L); Rockhill (C) (M); Perkasie (V); Argus (P); Telford (B); Langhorne (F) (Bn); Emilie L; (Tullytown).

Carex gracillima Schwein.

Meadows, moist woods and thickets; common.

Between Cauffman's Hill and Narrows (L); Pleasant Valley (B); Milford Square (F); Spinnerstown (L); Quakertown

(F); Rockhill (C); (M); Argus (F); Almont (L); Sellersville (F); Penn Valley (C); Tullytown (C).

Carex prasina Wahlenb.

Damp woods, thickets and meadows; occasional except on Coastal Plain.

Pleasant Valley (L); Spinnerstown (L); Rockhill (Sa); Sellersville (F); Woodbourne (J); (Nockamixon).

Carex Davisii Schwein. & Torr.

Moist thickets, open woods and meadows; frequent.

Narrowsville (Li) (Bn) (Br); Nockamixon (C); Deep Run, near Pipersville (F); Point Pleasant (Bn); Forks of the Neshaminy (Bn); New Hope (Sn); Morrisville (L); Andalusia (L).

Carex flexuosa Muhl.

(*C. debilis* Michx., var. *Rudgei* Bailey of Gray's Manual ed. 7. *C. tenuis* Rudge of Fretz's Flora.)

Moist woods, thickets and clearings; rare.

Penn Valley (C, June 1, 1899).

The northern phase of *C. debilis* from which it is separable with difficulty.

[Carex arctata Boott.

A northern species reported from Tullytown (C). The material on which this was based proves to be *C. debilis.*]

Carex debilis Michx.

Woods, thickets and open copses; frequent.

Quakertown (F); Fountainville (Gr); Bycot (K); Fallsington (L); Penn Valley (C); Tullytown (C) (F); Emilie (L); Bristol (Dr); Andalusia (L).

Carex Sprengelii Dewey.

(*C. longirostris* Torr. of Gray's Manual, ed. 7, and of Fretz's Flora.)

Rich banks, thickets and borders of woods; occasional in the upper end.

Monroe (R–R); Narrowsville (Li) (G); Nockamixon (M) (F) (C) (P) (G); Upper Black Eddy (Pr).

Carex virescens Muhl.

(Includes *C. costellata* of Fretz's Flora.)

Dry woods and banks; common except on Coastal Plain.

Monroe (R–R); Upper Black Eddy (Bn); Buckwampum Mountain (L); Pleasant Valley (F); Rockhill (F); Sellersville (F); Sundale (L); Lumberville (L); Buckingham (L); Brownsburg (L).

Carex Swanii (Fernald) Mackenzie.

(*C. virescens* Muhl., var. *Swanii Fernald.*)

Bul. Torr. Bot. Club, xxxvii. 246 (1910).

Dry to somewhat moist woods and banks; most abundant on Coastal Plain but also found inland.

Pleasant Valley (L); New Britain (B); Doylestown (Dr); Bycot (K) (B); Turkey Hill (L); Bristol (Dr); Andalusia (L).

Carex hirsutella Mackenzie.

(*C. triceps* Michx., var. *hirsuta* (Willd.) Bailey.) Bul. Torr. Bot. Club, l. 349 (1923).

Woods, fields and dryish to wet meadows; frequent.

Narrowsville (P) (Ha); Upper Black Eddy (Tr–P); Shelly (F); Rockhill (M); Sellersville (F); Telford (B); Hilltown (F); Doylestown (Dr); Emilie (L).

Carex caroliniana Schwein.

(*C. triceps* Michx., var. *Smithii* Porter.)

A southern species of meadows, moist fields and woodlands; rare.

Bristol (Dr, June 7, 1924); (Nockamixon).

Carex Bushii Mackenzie.

(*C. triceps cuspidata* Dewey.)

Bul. Torr. Bot. Club, xxxvii. 241 (1910).

Fields and thickets; not very common.

Upper Black Eddy (Tr–P); Haycock Mountain (Tr–P); Quakertown (L); Finland (F); Rockhill (C) (M); Sellersville (P) (F).

Carex pallescens L.

Fields and meadows; rare.

Penn Valley (C, three specimens, 1896 and 1899). Not recently observed.

Carex scabrata Schwein.

Moist woods, thickets and swamps; frequent in the upper end.

Buckwampum Mountain (L); Quakertown (C) (F); Rockhill (C); Argus (L); Bedminster (Mo); (Springfield).

Carex limosa L.

Boggy meadow; rare.

Rockhill (C) (F) (Mo) (Bn).

This station still exists and collections are made occasionally. The earliest date represented above is 1876 (Mo).

Carex Buxbaumii Wahlenb.

(*C. polygama* Schkuhr. of Gray's Manual, ed. 7. *C. fusca* of Fretz's Flora.)

Boggy meadows, marshes and wet shores; not rare except on the Coastal Plain.

Revere (L); Nockamixon (H) (M) (C); Narrowsville (P) (Li); Finland (L); Spinnerstown (L); Rockhill (C); Argus (C); Sellersville (P) (F); Bedminster (Mo); Plumstead (Mo); (Tullytown).

Carex stricta Lam. Tussock Sedge.

Low meadows and borders of marshes; common.

Monroe (R–R); Nockamixon (C); Ottsville (L); Pleasant Valley (L); Rockhill (W); Penn Valley (F) (C); Tullytown (K).

Carex strictior Dewey.

Bul. Torr. Bot. Club, xlii. 405 (1915).

Low meadows, marshes and sandy shores; rather frequent.

Pleasant Valley (L); Springfield Township (F); Sellersville (C); Penn Valley (C).

Segregated from *C. stricta* by its stoloniferous habit thus growing in beds while *C. stricta* is the common tussock sedge.

Carex Haydeni Dewey.

(*C. stricta* Lam., var. *decora* Bailey.)

Swamps and wet meadows; rare.

Sellersville (F); Plumstead (Ma) (Mo); (Bedminster).

Carex Emoryi Dewey.

(*C. stricta* var. *angustata* of authors, also *C. Goodenovii* of local authors.)

Bul. Torr. Bot. Club, xlii. 405 (1915).

Meadows and swales; frequent.

Lehnenberg (L); Kintnersville (V); Narrowsville (L); Point Pleasant (L); Center Bridge (L); Jericho Hill (L); Penn Valley (C); (Tullytown).

A freely stoloniferous plant like *C. strictior* but much stouter and basal sheaths are not filamentose. Perigynia straw-colored, abruptly and prominently short beaked, smooth except toward apex.

[**Carex Goodenovii** J. Gay.

(*C. acuta* L.) Bull. Torr. Bot. Club, l. 343–345 (1923).

A northern species not found in this County. The Penn Valley record is based on *C. Emoryi.*]

Carex torta Boott.

Along streams in wet gravel or sand, sometimes in wet meadows; common except on Coastal Plain.

Durham (We–P); Kintnersville (C); Nockamixon (H); Narrowsville (P) (Bn); Finland (F); Spinnerstown (L); Rockhill (F) (C); Argus (C); Sellersville (F) (P); Pipersville (L); (Deep Run).

Carex crinita Lam.

Along streams and shores, sometimes in wet meadows; common.

Monroe (R–R); Narrowsville (G); Nockamixon (M); Ottsville (L); Shelly (B); Spinnerstown (L); Rockhill (B); Sellersville (F); Yardley (Dr); Fallsington (L); Tullytown (C); Bristol (Dr).

Carex gynandra Schwein.

(*C. crinita* Lam., var. *gynandra* (Schwein.) Schwein. & Torr.)

Boggy meadows; rare.

1½ miles northwest of Pleasant Valley (B, June 9, 1923).

Carex lacustris Willd.

(*C. riparia* of Gray's Manual, ed. 7.)

Wet meadows, swamps and shores; infrequent.

Springfield Township (F); Quakertown (Ma) (G); Rockhill (C); Penn Valley (C); (Argus).

Carex vestita Willd.

Sandy or rocky woods; infrequent.

Dublin (B); Penn Valley (C); Tullytown (M) (F) (C); Bristol (P); (Quakertown); (Point Pleasant).

[Carex lasiocarpa Ehrh.

(*C. filiformis* of Fretz's Flora.)

This plant is recorded from Turkey Hill (C). There is a sheet in the herbarium of the Philadelphia Botanical Club forming the basis of this record. Mr. Bayard Long has placed the following notation on the sheet, "There is a strong probability that this specimen, not labelled by Crawford (not in his own handwriting but on a label bearing his name) and without data, came from Long Pond, Monroe Co., Pa. Compare with sheet No. 504,300 in the herbarium of the Academy of Natural Sciences of Philadelphia." This species is therefore excluded.]

Carex lanuginosa Michx.

Swamps, wet meadows and ditches; frequent.

Monroe (R–R); Narrowsville (Br); Nockamixon (C) (H) (M); Quakertown (B); Rockhill (C) (V); Sellersville (F) (C); Penn Valley (C); Tullytown (C) (F).

***Carex hirta** L.

A naturalized European species; rare.

Tullytown (W, May 30, *no year given*).

Carex trichocarpa Muhl.

Wet meadows and marshes; frequent in upper end.

Narrowsville (Li); Nockamixon (C) (H); Rockhill (C); Sellersville (F) (C); Glen Lake (J); (Quakertown); Penn

Valley—This record is based on a specimen which has been reidentified as *C. lanuginosa*).

Carex folliculata L.

Wet woods and swamps; locally abundant on Coastal Plain, unknown elsewhere in County.

Yardley (L); Fallsington (L); Tullytown (C); Bristol (Br).

Carex rostrata Stokes.

(*C. utriculata* of Fretz's Flora.)

Swampy ground; rare and local.

Pleasant Valley (L); Rockhill (C); Penn Valley (C) (F).

Carex vesicaria L.

(Includes *C. monile* Tuckerm. of Fretz's Flora.)

Meadows; rare.

Durham (R–R); Sellersville (C) (F) (J). (A Nockamixon (Li) record is based on material which was reidentified as *C. trichocarpa.*)

A northern species near its southern limits here.

Carex bullata Schkuhr.

Swampy ground; rare.

Swampy meadow, Bristol (F, May 29, 1905).

[**Carex retrorsa** Schwein.

We have a Porter record for Bucks County for this northern species but no material to verify it. The species is therefore excluded.]

Carex lurida Wahlenb.

(Includes *C. lurida flaccida* and *C. lurida parvula* of Fretz's Flora.)

Wet woods and swamps; common.

Monroe (R–R); Upper Black Eddy (Tr–P); Shelly (B); Brick Tavern (Ha); Finland (B); Rockhill (F) (K); Argus (F) (C); Sellersville (J) (F); Telford (B); Point Pleasant (F); Doylestown (B); Buckingham (K); Neshaminy (Mc); Yardley (Dr); Tullytown (K); Andalusia (L).

Carex comosa Boott.

Swamps, marshes and wet shores; frequent.

Riegelsville (R–R); Nockamixon (C); Rockhill (Br) (W); Argus (F); Penn Valley (F); Tullytown (Bn) (D) (M); (Quakertown); (Springfield).

Carex hystericina Muhl.

Wet meadows, swamps and bogs; common.

Monroe (R–R); Nockamixon (C) (P); Springfield Township (F); Finland (L); Rockhill (B); Argus (F); Point Pleasant (F); Aquetong (K); Penn Valley (C); Tullytown (V); Bristol (F).

Carex squarrosa L.

Swamps and wet thickets; rare on Coastal Plain, frequent elsewhere.

Narrowsville (P); Nockamixon (P); Upper Black Eddy (Bn); Revere (W); Shelly (B); Brick Tavern (Ha); Rockhill (Br) (K); Argus (C); Sellersville (P) (F); Point Pleasant (L); Bycot (K); Tullytown (Dr).

Carex Asa-Grayi Bailey.

(*C. Grayii* Carey.)

Wet woods, thickets and meadows; occasional except on Coastal Plain.

Ottsville (L); Quakertown (F); Steinsburg (Wi); Brownsburg (Wi).

Carex intumescens Rudge.

Wet woods, meadows and borders of swamps; frequent.

Durham (R–R); Revere (L); Pleasant Valley (B); Shelly (F); Brick Tavern (Ha); Quakertown (F); Spinnerstown (L); Yardley (L); Tullytown (M).

Carex lupulina Muhl.

Swamps, wet meadows and ditches; locally abundant.

Durham (R–R); Rockhill (B); Argus (C); Oxford Valley (B); Emilie (L); Bristol (F) (P).

Carex lupuliformis Sartwell.

Swampy ground; rare.

Bristol (F, June 17, 1892); (Nockamixon); (Rockhill).

ARACEAE (ARUM FAMILY)

Arisaema triphyllum (L.) Schott. JACK-IN-THE-PULPIT.

Rich damp woods and thickets; frequent.

Durham Furnace (L); Finland (F); Doylestown (Me); Point Pleasant (L); Center Bridge (B); Yardley (L); Hulmeville (B).

Arisaema pusillum (Peck) Nash.

Damp woods and thickets; rare.

Yardley (L); Roelofs (L); (Turkey Hill).

Distinguished from the preceding, by its smaller size, its leaves which are shiny green on both surfaces and its spathe which is deep purplish inside.

Arisaema Dracontium (L.) Schott. GREEN DRAGON.

Woods, thickets and meadows; local.

Sellersville (F); Forks of Neshaminy (Bn); Rushland (C. R. Wertsner); Hendricks Island, above Center Bridge (F).

Peltandra virginica (L.) Kunth. ARROW ARUM.

Shallow water along borders of ponds and streams; rare and local in lower end.

Bristol (F) (B); Emilie (L); (Bensalem).

Symplocarpus foetidus (L.) Nutt. SKUNK CABBAGE.

Swamp ground in woods, thickets and open places; frequent.

Buckwampum Mountain (R–R); Spinnerstown (L); Steinsburg (Mrs. S. W. Creasey); Sellersville (F); Morrisville (B); Oxford Valley (L); Croydon (L).

Orontium aquaticum L. GOLDEN CLUB.

Marshes, shallow ponds and streams; locally abundant.

Narrowsville (B); Ridge Valley (F); Almont (L); Grenoble (L); Andalusia (L); (Rockhill).

Acorus Calamus L. SWEET FLAG. CALAMUS.

Wet meadows and borders of marshes; frequent.

Upper Black Eddy (Tr–P); Pleasant Valley (L); Milford Square (L); Argus (B); Sellersville (F); Point Pleasant (L); Doylestown (Me); Andalusia (L).

LEMNACEAE (DUCKWEED FAMILY)

Spirodela polyrhiza (L.) Schleid.

Quiet waters of ponds, ditches and marshes; occasional.

Durham Furnace (F); Narrowsville (Bn); Solebury Township, near New Hope (Va–G); Bristol (Dr).

Lemna trisculca L.

Ponds and ditches, chiefly in calcareous regions; rare. In creek at Ridge Valley (F, Sept., 1883).

Dr. C. D. Fretz and the writer tried, about 1916, to rediscover this plant but without avail.

Lemna valdiviana Philippi.

(*L. cyclostata* of authors.)

Shallow water of ponds, brooks and swales; apparently very rare.

Floating on shallow water of swale near P. R. R. station, Bristol (L, May 31, 1924).

Lemna minor L. DUCKWEED.

Quiet waters of marshes, ditches and ponds; frequent.

Lehnenberg (L); Uhlertown (Me); Point Pleasant (F); Ingham Springs, Solebury Township (Bt); Penn Valley (B); Morrisville (L); Tullytown (F); Bristol (B).

Wolffia columbiana Karst.

Quiet waters of ponds and marshes; rare.

Tullytown (B, May 24, 1930.) (Bristol).

Mr. A. F. K. Krout, of Philadelphia, in a letter to Dr. C. D. Fretz, dated March 30, 1898, writes as follows: "So far Crawford and I have been doing the most work in lower Bucks County. *W. columbiana* should have our joint credit since we discovered it when making a trip together—not at Bristol, but east of Tullytown. St. Louis have given us joint credit." This is probably the same station which was re-discovered in 1930. None of the Krout and Crawford material is in the local herbaria.

ERIOCAULACEAE (PIPEWORT FAMILY)

[Eriocaulon septangulare With.

Reported from Bristol but no material has been found from this station to verify the record. No material representative of

this species is in the herbarium of the Philadelphia Botanical Club from anywhere in southeastern Pennsylvania.]

Eriocaulon Parkeri Robinson.

Tidal mud on shores of Delaware River; locally abundant.

Tullytown (L); Bristol (B); Andalusia (Bn).

XYRIDACEAE (YELLOW-EYED GRASS FAMILY)

Xyris caroliniana Walt.

Swamps and muddy shores; occasional in lower end.

Turkey Hill (B); Tullytown (L).

Xyris torta J. E. Sm. YELLOW-EYED GRASS.

Swamps and boggy meadows; not common.

Springfield (F); Morrisville (L); Tullytown (Bn); Bristol (C); (Glen Lake).

COMMELINACEAE (SPIDERWORT FAMILY)

Tradescantia virginiana L. SPIDERWORT.

Mostly in woods and thickets, preferably in alluvial soil; not common.

Monroe (R–R); Nockamixon (P) (Se); Point Pleasant (F); Doylestown (J. P. Otter); Center Bridge (B).

***Commelina communis** L. DAYFLOWER.

Rich soil of roadsides and waste places; naturalized from Asia; frequent.

Ottsville (B); Sellersville (F); New Britain (Sm); Farm School (B); Point Pleasant (F); Washington's Crossing (Me); Morrisville (B); Tullytown (B); Bristol (F); Newportville (B); Churchville (B).

PONTEDERIACEAE (PICKEREL-WEED FAMILY)

Pontederia cordata L. PICKEREL-WEED.

Borders of ponds and streams and in marshes; frequent.

Kintnersville (R–R); Weisel (B); Rockhill (B); Tohickon Park (F); Point Pleasant (B); Bridge Point (Me); Grenoble (L); Morrisville (B); Bristol (Dr).

Heteranthera reniformis R. & P. MUD PLANTAIN.

Shallow water or muddy banks of ponds and streams; frequent.

Finland (B); Argus (F); Point Pleasant (L); Grenoble (L); Neshaminy Falls (Ad); Washington's Crossing (Me); Bristol (B); Andalusia (L).

Heteranthera dubia (Jacq.) MacM. WATER STAR GRASS.

Slow streams, muddy shores and marshes; not common.

Narrowsville (J); Finland (B); Sellersville (F); Neshaminy Creek (M); Point Pleasant (L); New Hope (Va–G); Morrisville (L).

JUNCACEAE (RUSH FAMILY)

Juncus bufonius L. TOAD RUSH.

Ditches, roadsides and shores; frequent but poorly represented in herbaria.

Monroe (R–R); Quakertown (F); Rocky Ridge (B).

Juncus tenuis Willd. PATH RUSH.

Dry or moist soil, frequently in paths but also in waste places and grassland; common.

Nockamixon (Tr–P); Haycock Mountain (Tr–P); Sellersville (F); Telford (B); Doylestown (B); Bristol (Dr).

Juncus secundus Beauv.

Dry sandy or sterile soil; common.

Nockamixon (P); Erwinna (Me); Sellersville (F); Telford (B); Stump Road, Plumstead Township (L); Bristol (Dr).

Juncus Dudleyi Wiegand.

Damp soil; rare.

Point Pleasant (F, July 4, 1899).

A northern form closely allied with *J. tenuis*.

Juncus dichotomus Ell. FORKED RUSH.

Low, dry or moist sandy soil of the Coastal Plain, locally abundant.

Fallsington (L); Tullytown (F); Bristol (D) (L); (Point Pleasant).

Juncus dichotomus Ell., var. **platyphyllus** Wiegand.

Dry or moist soil; rare.

Nockamixon (Tr–P); Revere (L); Rockhill (F); Roelofs (L).

Juncus effusus L., var. **solutus** Fernald and Wiegand.

(*J. effusus* L. of Gray's Manual, ed. 7, in part, and of Fretz's Flora.) Rhodora, xii. 81 (1910).

Meadows, marshes, ditches and shores; common.

Upper Black Eddy (Tr–P); Sellersville (L); Neshaminy (Mc); Bycot (K); Bristol (B).

Juncus canadensis J. Gay.

Marshy ground; not rare.

Sellersville (F); Morrisville (L); Tullytown (Dr); Edgely (B).

Juncus subcaudatus (Engelm.) Coville & Blake.

(*J. canadensis,* var. *subcaudatus* of Gray's Manual, ed. 7). Proc. Biol. Soc. Wash. xxxi, 45 (1918).

Marshy ground; occasional.

Buckwampum Mountain (R); Pleasant Valley (B); Finland (F); Fallsington (B).

Juncus nodosus L.

Wet ground; rare. Point Pleasant (F, July 4, 1899).

Juncus scirpoides Lam.

Wet sandy soil; rare.

Bristol (L, August 4, 1927); (Neshaminy).

Juncus acuminatus Michx.

Ditches and moist meadows and fields; common.

Upper Black Eddy (Tr–P); Ottsville (L); Almont (F); Sellersville (Dr); Telford (B); Point Pleasant (F); Neshaminy (Mc); Buckingham (Dr); Washington's Crossing (Dr); Yardley (Dr); Morrisville (Dr); Tullytown (F); Bristol (Dr); Croydon (Dr).

[**Juncus debilis** Gray.

A plant of wet places and sandy shores reported from "Opposite Trenton" and Landisville but no material exists to verify these records.]

Juncus marginatus Rostk.

Moist sandy soil; frequent.

Monroe (R–R); Upper Black Eddy (Tr–P); Sellersville (F); Yardley (Dr); Roelofs (L); Bristol (C).

Luzula saltuensis Fernald. Wood Rush.

(*Juncoides pilosum* (L) Kuntze of Fretz's Flora.)

Rich banks and woods; rare.

Spinnerstown (L); Argus (Bn); (Milford). The Milford record may be covered by the Spinnerstown specimen.

Luzula campestris (L.) DC., var. **multiflora** (Ehrh.) Celak. Wood Rush.

Woods, fields and meadows, occasional.

Quakertown (F); Milford Square (B); Spinnerstown (L); Rockhill (F); Turkey Hill (L).

Luzula campestris (L.) DC., var. **bulbosa** A. Wood.

Dry open sandy woods and thickets; rare.

Turkey Hill (L, June 13, 1919).

Luzula campestris (L.) DC., var. **echinata** (Small) Fernald and Wiegand.

(*L. campestris* (L.) D.C., var. *bulbosa* of Gray's Manual, ed. 7, in part.) Rhodora, xv. 42 (1913).

Moist rather open woods and thickets; common.

Nockamixon (B); Erwinna (L); Milford Square (L); Finland (F); Telford (B); Dublin (B); Aquetong (Wi); Neshaminy (L); Trevose (Dr); Center Bridge (B); Washington's Crossing (L); Morrisville (Dr); Fallsington (Dr); Andalusia (L).

LILIACEAE (lily family)

Chamaelirium luteum (L.) Gray. Devil's Bit.

Low, usually open ground; not common.

Revere (Austin Fabian–R); Rockhill (F) (Bn); Doylestown (Me); Bycot (J); (Plumstead).

Amianthium muscaetoxicum (Walt.) Gray. Fly Poison.

(*Chrosperma muscaetoxicum* of authors.)

Dry sandy open woods, or thickets; rare.

Tullytown (F) (V) (W); (Bensalem).

The latest collection from Tullytown is May 30, 1913, by Fretz.

Melanthium virginicum L. BUNCH-FLOWER.

Marshes, wet meadows and woods; rare.

Finland (B); Bristol (F); (Argus); (Tullytown).

Melanthium latifolium Dear.

Dry woods and hillsides; not frequent.

Buckwampum Mt. (L); Finland (L); Rockhill (F); Sellersville (F); Doylestown (Me); Center Bridge (R–R); (Argus).

Veratrum viride Ait. AMERICAN WHITE HELLEBORE.

Low meadows and woods; frequent.

Buckwampum Mountain (R–R); Pleasant Valley (B); Rockhill Township (F); Doylestown (Me); Yardley (L); Fallsington (L); Andalusia (L).

Uvularia perfoliata L. PERFOLIATE BELLWORT.

Open, rather dry, woods; frequent.

Kintnersville (T); Sundale (L); Pleasant Valley (F) (B); Finland (L); Argus (F) (B); Rockhill (F); Doylestown (Me); Aquetong (K).

Uvularia sessilifolia L. SESSILE BELLWORT.

(*Oakesia sessilifolia* (L.) Wats. of Gray's Manual, ed. 7.)

Rich dry or moist woods; frequent.

Monroe (R–R); Buckwampum Mountain (L); Rockhill (F); Sellersville (B); Doylestown (Me); Neshaminy (Me); Yardley (Dr); Oxford Valley (L); Andalusia (L).

Allium tricoccum Ait. WILD LEEK.

Rich damp woods especially near streams; locally abundant.

Durham (R–R); Steinburg (Wi); Ridge Valley (F); Bedminster (L); Plumstead (Ma); (Rockhill).

Allium canadense L. WILD GARLIC.

Damp soil, chiefly in meadows; frequent.

Revere (R–R); Pleasant Valley (B); Rockhill (M); Sellersville (F); Point Pleasant (L); Morrisville (L); Hulmeville (B); Andalusia (L).

***Allium vineale L.** FIELD GARLIC.

Moist fields, banks and meadows; frequent.

Monroe (R–R); Sellersville (F); Danboro (L); Grenoble (L); Brownsburg (L); Croydon (Dr).

***Allium carinatum L.**

Roadside banks and meadows; adventive from Europe; rare.

Sellersville (Dr); Lumberville (F); Grenoble (L).

Also reported from Doylestown by J. Kirk Leatherman, but no herbarium material was found.

***Hemerocallis fulva L.** DAY LILY.

Escaped from cultivation along roadside banks, borders of streams and in waste places; frequent.

Monroe (R–R); Finland (L); Sellersville (F); Erwinna (B).

Lilium philadelphicum L. WOOD LILY.

Dry woods and thickets; frequent in Piedmont districts.

Durham (R–R); Revere (W); Pleasant Valley (B); Rockhill (J) (V); Finland (Me); Argus (B); Almont (L); Doylestown (Me); (Sellersville); (Solebury Township); (Tullytown).

Lilium canadense L. MEADOW LILY.

Moist meadows and bogs in rich soil; common.

Monroe (R–R); Quakertown (Mo); Rockhill (W); Almont (F); Telford (B); Fountainville (B); Doylestown (Me).

Lilium superbum L. TURK'S-CAP LILY.

Low rich soil of the Coastal Plain; locally abundant.

Morrisville (B); Yardley (Dr); Fallsington (L); Tullytown (B); Emilie (Dr); Croydon (B); (Bristol).

***Lilium tigrinum Ker.** TIGER LILY.

Well established on wooded slope along streamlet in Bensalem Township, one and three-fourths miles southwest of Hulmeville (B, May 30, 1931).

Erythronium americanum Ker. YELLOW ADDER'S-TONGUE.

Rich woods and gravelly banks; common.

Revere (W); Ottsville (B); Quakertown (L); Milford Square (L); Sellersville (F); Telford (B); Danboro (B); Doylestown

(Me); Neshaminy (Mc); Aquetong (L); Dolington (L); New Hope (Sg); Brownsburg (L); Washington's Crossing (L); Fallsington (L).

***Tulipa sylvestris** L.

Established in meadows and thickets; rare.

Sellersville (F) (Bn); Pipersville (L); Langhorne (Miss L. Canby–G).

***Ornithogalum umbellatum** L. STAR-OF-BETHELHEM..

Escaped from gardens and established in meadows, fields and roadsides; common.

Monroe (R–R); Bursonville (B); Ottsville (B); Milford Square (L); Sellersville (F); Telford (B); Neshaminy (Mc); Tullytown (L); Hulmeville (B).

***Muscari botryoides** (L.) Mill. GRAPE HYACINTH.

Escaped from cultivation and established in meadows and fence rows; infrequent.

Otfsville (L); Applebachsville (B); Pipersville (L); Neshaminy (Mc); Hartsville (L).

***Asparagus officinalis** L. GARDEN ASPARAGUS.

Roadside banks, fence rows and borders of thickets, escaped from cultivation; frequent.

Ottsville (B); Haycock Run (B); Almont (F); Sellersville (F); Point Pleasant (L); Furlong (L); Neshaminy (Mc).

Smilacina racemosa (L.) Desf. FALSE SPIKENARD.

(*Vagnera racemosa* (L.) Morong.)

Rich moist woods, thickets and banks; common.

Monroe (R–R); Bridgeton Township (L); Ottsville (L); Spinnerstown (L); Rockhill (F); Telford (B); Doylestown (Mc); Neshaminy (Mc); Rushland (L); Buckingham Valley (B); Center Bridge (B); Brownsburg (L); Newportville (L); Fallsington (L); Bristol (Dr).

Smilacina stellata (L.) Desf.

(*Vagnera stellata* (L.) Morong.)

Moist banks and thickets; rare.

Wyker's Island (R–R); Quakertown (B); Sellersville (F); (Ridge Valley).

Maianthemum canadense Desf. False Lily-of-the-Valley.

(*Unifolium canadense* (Desf.) Greene.)

Dry or damp woods and banks; common.

Nockamixon (C) (M); Ottsville (B); Tohickon (Me); Richlandtown (L); Milford Square (B); Spinnerstown (L); Argus (J); Rockhill (F); Almont (B); Doylestown (Me); Holicong (Wi); Forks of Neshaminy (Bn); Yardley (L); Fallsington (L); Penn Valley (S); Tullytown (M); Bristol (F).

Polygonatum pubescens (Willd.) Pursh. Small Solomon's Seal.

(*P. biflorum* of Gray's Manual, ed. 7.) Bul. Torr. Bot. Club, xlii, 253 (1915).

Dry woods, thickets and copses; common.

Ottsville (L); Richlandtown (L); Quakertown (L); Milford Square (L); Argus (J); Sellersville (F); Pipersville (L); Neshaminy (Mc); Rushland (L); Lower Black Eddy (L); New Hope (Sg); Brownsburg (L).

Polygonatum biflorum (Walt.) Ell. Great Solomon's Seal.

(*P. commutatum* of Gray's Manual, ed. 7.) Bul. Torr. Bot. Club, xlii, 254 (1915).

Meadows, banks and thickets; common.

Nockamixon (Se); Milford Square (L); Spinnerstown (L); Finland (B); Rockhill (F); Telford (Sm); New Britain (B); Doylestown (Me); Lahaska (L); Buckingham Valley (B); New Hope (B) (Sg); Richboro (L); Bristol (Dr).

***Convallaria majalis** L. Lily-of-the-Valley.

Escaped from cultivation; not frequent.

Perkasie (F, May 10, 1881).

Medeola virginiana L. Indian Cucumber Root.

Humus of rich woods and banks; frequent.

Pleasant Valley (B); Argus (B); Doylestown (Me); Buckingham Valley (B); Yardley (L); Fallsington (L); Tullytown (L); Andalusia (L).

Trillium erectum L.

Damp rich woodlands and banks; rare.

Nockamixon (F) (P); Narrowsville (V).

Trillium cernuum L. NODDING WAKE ROBIN.

Moist woods and banks; occasional in upper end.

Nockamixon (C); Buckwampum Mountain (L); East Rockhill Township (F); Rockhill (F); Center Bridge (R–R); (Edison).

Aletris farinosa L. COLIC ROOT.

Sandy woods and thickets; rare.

Rockhill (F, June 23, 1902, and June 22, 1903).

Smilax herbacea L. CARRION FLOWER.

Meadows, banks and thickets; common.

Monroe (R–R); Ottsville (L); Buckwampum Mountain (L); Richlandtown (L); Spinnerstown (L); Rockhill (F); Almont (L); Telford (B); Plumstead (Mo); Point Pleasant (L); Doylestown (Me); Neshaminy (Mc); Oxford Valley (B).

Smilax pulverulenta Michx.

(*S. herbacea*, var. *pulverulenta* of Gray's Manual, ed. 7.) Bul. Torr. Bot. Club, xliii. 420 (1916).

Banks, fence rows and meadows; less frequent than preceding.

Nockamixon (P) (M); Buckwampum Mountain (L); Center Bridge (B).

Smilax rotundifolia L. GREEN BRIER.

Moist woods and thickets; locally abundant.

Monroe (R–R); Haycock Mountain (L); Spinnerstown (L); Finland (L); Rockhill (F); Yardley (Dr); Fallsington (L); Bristol (Dr).

Smilax glauca Walt. SAW BRIER.

Dry sandy thickets in lower end; rare.

Turkey Hill (L); Tullytown (M); Hulmeville (B); (Sellersville); (Point Pleasant); (Bristol).

Smilax hispida Muhl.

Moist woods, thickets and wooded swamps; locally abundant except on Coastal Plain.

Monroe (R–R); Spinnerstown (L); Finland (B); Rockhill (F); (W); Pipersville (L); (Argus).

DIOSCOREACEAE (YAM FAMILY)

Dioscorea villosa L. WILD YAM ROOT.

Moist thickets and fence rows; frequent except on Coastal Plain.

Narrowsville (L); Pleasant Valley (B); Shelly (B); Finland (L); Rockhill (K) (W); Sellersville (F); Curley Hill (B); Doylestown (B) (Me); Brownsburg (L); Oxford Valley (B).

AMARYLLIDACEAE (AMARYLLIS FAMILY)

***Narcissus Pseudo-Narcissus** L. DAFFODIL.

Established in meadows, banks and fence rows; occasional.

Finland (L); Pipersville (L); Danboro (B, single and double forms); Neshaminy (Mc).

***Narcissus poeticus** L. POET'S NARCISSUS.

Naturalized in various situations; rare.

Haycock Township (Mo, June, 1879).

Hypoxis hirsuta (L.) Coville. STAR GRASS.

Dry, mostly sandy fields, thickets and open woods; common.

Ottsville (B); Richlandtown (L); Milford Square (B); Spinnerstown (B); Finland (B); Rockhill (M); Argus (L); Telford (B); Neshaminy (M); Buckingham (L).

IRIDACEAE (IRIS FAMILY)

Iris versicolor L. BLUE FLAG.

Marshes, meadows and wet shores; common.

Nockamixon (Se) (P) (M); Uhlertown (Me); Ottsville (L); Richlandtown (Me); Spinnerstown (L); Rockhill (M); Argus (F); Almont (B); Tullytown (M); Bristol (M); Andalusia (L).

Iris prismatica Pursh. SLENDER BLUE FLAG.

Marshes and wet meadows; rare.

Sellersville (F); (Tullytown).

***Iris pseudacorus** L. YELLOW FLAG.

Abundantly established in a meadow.

Pleasant Valley (L, June 9, 1923); (Morrisville).

***Iris germanica** L. FLEUR-DE-LIS.

A European introduction becoming established in meadows; rare.

Sellersville (F, June 8, 1923); (Buckingham Mountain according to J. Kirk Leatherman. No herbarium material found.)

***Belamcanda chinensis** (L.) DC. BLACKBERRY LILY.

(*Gemmingia chinensis* of Fretz's Flora.)

Roadsides, open woods, thickets and waste places; naturalized occasionally.

Haycock Mountain (Ma) (Sm); Springfield Township (J. P. Otter); Finland (L); Jericho Hill (L); New Hope (B).

Sisyrinchium mucronatum Michx. BLUE-EYED GRASS.

Fields, meadows, open woods and thickets; frequent.

Bursonville (Me); Ottsville (L); Kellers Church (B); Richlandtown (B); Quakertown (F); Milford Square (L); Finland (L); Rockhill (W) (M) (B); Argus (J) (M); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc); Center Bridge (B); Brownsburg (Wi); Roelofs (L); Tullytown (W).

[Sisyrinchium angustifolium Mill.

A northern species reported from Ridge Valley by Fretz. The material forming the basis for this record has been reidentified as *S. mucronatum.*]

Sisyrinchium arenicola Bicknell.

Sandy field on Coastal Plain; rare.

Bristol, (Dr, June 7, 1924).

Sisyrinchium gramineum Curtis. BLUE-EYED GRASS.

(*S. graminoides* Bicknell.)

Dry to moist grassy situations including damp open woods and thickets; frequent in upper end, occasional in lower end.

Kintnersville (Dr); Shelly (B) (F); Rockhill (B); Curley Hill (B); Neshaminy (M); Lahaska (L); Tullytown (F); Andalusia (L).

Sisyrinchium atlanticum Bicknell.

Dry to moist, sandy, open situations; occasional on Coastal Plain.

Tullytown (F) (K); Bristol (B).

ORCHIDACEAE (ORCHID FAMILY)

[Cypripedium parviflorum Salisb. YELLOW LADY'S SLIPPER.

Reported from Argus and Lower Black Eddy but no herbarium material from the latter station has been located. A specimen from Argus is being treated here as *C. parviflorum,* var. *pubescens.*]

Cypripedium parviflorum Salisb., var. **pubescens** (Willd.) Knight.

(*C. hirsutum* of authors, not Mill.)

Rich or moist upland woods and thickets; rare.

Finland (Crawford and Sowden); Finland (Bl); Argus (J).

This plant is given only varietal rank by many writers. Some even go so far as to regard it merely as an ecological form of the species but so far no satisfactory explanation of this change through ecological factors has been advanced.

Cypripedium acaule Ait. MOCCASIN FLOWER.

Woods and thickets; locally abundant.

Buckwampum Mountain (Me); Springfield Township (F); Pleasant Valley (B); Doylestown (Me); Ingham's Spring in Solebury Township (Bt); Buckingham Mountain (Wi); Turkey Hill (F); Roelofs (L); Fallsington (L); Tullytown (C); (Durham); (Bridge Valley).

Orchis spectabilis L. SHOWY ORCHIS.

Dry to somewhat damp woods, thickets and banks; not frequent.

Nockamixon (M); Ottsville (L); Quakertown (B); Milford Square (B); Finland (L); Rockhill (F); Point Pleasant (Darlington–G); New Hope (B).

Habenaria flava (L.) Gray.

Low meadows, open bogs and sometimes in wet open woods; rare.

Durham (F); Narrowsville (F); Spinnerstown (L); Finland (Bl–G); (Rockhill); (Sellersville); (Buckingham).

Habenaria clavellata (Michx.) Spreng.

(*Gymnadeniopsis clavellata* (Michx.) Rydb.)

Open bogs and moist woods and thickets; rare.

Buckwampum Mountain (R–R); Yardley (Dr); one and one-half miles east of Langhorne (B); Tullytown (C); (Point Pleasant).

[**Habenaria cristata** (Michx.) R. Br.

(*Blephariglottis cristata* (Michx.) Raf.)

Reported from Langhorne by I. C. Martindale. No material covering this record has been found. This is primarily a Coastal Plain orchid and is represented from Pennsylvania by herbarium material only from Frazer's Bog, Willow Grove, Montgomery County.]

Habenaria ciliaris (L.) R. Br. Yellow Fringed Orchis.

Boggy woods and thickets; rare.

Yardley (B, August 28, 1923, and Dr, August 8, 1925).

This plant was not credited to Bucks County by any of the previous writers.

Habenaria lacera (Michx.) R. Br. Ragged Fringed Orchis.

(*Blephariglottis lacera* (Michx.) Rydb.)

Swamps, damp fields, meadows, roadsides and thickets; scattered but nowhere plentiful.

Nockamixon (P); Revere (W); Finland (L); Rockhill (F); Brownsburg (B); Penn Valley (C); Tullytown (C); Bristol (C).

Habenaria psycodes (L.) Sw. Purple Fringed Orchis.

(*Blephariglottis psycodes* (L.) Rydb.)

Wet places; very rare.

Buckwampum Mountain (R–R, August, 1885); Point Pleasant (F, August, 1882, and July 11, 1899).

Pogonio ophioglossoides (L.) Ker. ROSE POGONIA.

Bogs, in acid soil; rare.

Pleasant Valley (B); Finland (L); Rockhill (W) (P) (J); Oxford Valley (L).

Isotria verticillata (Willd.) Raf.

(*Pogonia verticillata* of Gray's Manual, ed. 7.)

Damp woodlands and bogs; rare.

Tullytown (F) (C) (Bn); Roelofs (L); Bristol (L); Andalusia (Ma); (Buckingham).

Triphora trianthophora (Sw.) Rydb. NODDING POGONIA.

(*Pogonia trianthophora* of Gray's Manual, ed. 7.)

Rich woods; rare.

Richland Township (Mo, August 30, 1879).

Calopogon pulchellus (Sw.) R. Br.

(*Limodorum tuberosum* L. of Fretz's Flora.)

Bogs; rare.

Springfield Township (C. F. Myers, between 1873 and 1879); Bristol (L, July 1, 1931).

***Serapias Helleborine** L.

Introduced about house with shrubbery; rare.

Riegelsville (Pr, August 8, 1923).

This plant was probably introduced from Europe and has been known from certain parts of the country for many years. It appears to be the only orchid which is spreading to any extent and prefers wild situations rather than cultivated and waste ground as is the case with most adventive plants. In some parts of the country, *e.g.*, in sections of central and western New York State, it is becoming very abundant.

Spiranthes Beckii Lindl.

(*Gyrostachys simplex* of Fretz's Flora.)

Dry soil of the Coastal Plain; rare and local.

Penn Valley (J, August 17, 1897).

Spiranthes gracilis (Bigel.) Beck. SLENDER LADIES' TRESSES.

(*Gyrostachys gracilis* of Fretz's Flora.)

Dry, preferably sandy or gravelly, banks and thickets; frequent.

Pleasant Valley (B); Perkasie (Pr); Almont (L); Roelofs (L); Newtown (Va–G); Penn Valley (C) (J); (Tullytown).

Spiranthes lucida (H. H. Eaton) Ames. LADIES' TRESSES.

(*Gyrostachys plantaginea* (Raf.) Britton of Fretz's Flora.)

Moist soil including stream banks and shores; infrequent.

Ottsville (B); Pleasant Valley (B); Andalusia (Ma).

Spiranthes cernua (L.) Richard. LADIES' TRESSES.

(*Gyrostachys cernua* of Fretz's Flora.)

Moist to wet open soil; frequent.

Durham (R–R); Narrowsville (M); Pleasant Valley (B); Rockhill (K) (B); Doylestown (Me); Buckingham (J); Penn's Park (L); Yardley (Me); Penns Manor (B); Tullytown (C) (J); Roelofs (L); Bristol (C).

Epipactis pubescens (Willd.) A. A. Eaton. RATTLESNAKE PLANTAIN.

(*Peramium pubescens* of Fretz's Flora.)

Dry soil of coniferous woods and sometimes deciduous woods; infrequent.

Ottsville (B); Erwinna (L); Buckwampum Mountain (L); Pleasant Valley (B); Doylestown (Me); Brownsburg (B).

Corallorrhiza maculata Raf. CORAL ROOT.

(*C. multiflora* Nutt.)

Dry to somewhat damp woods in rather light soils; infrequent.

Upper Black Eddy (Tr–P); Beaver Creek (B); Haycock Mountain (Mc); Pleasant Valley (B); Rockhill (B); Argus (L); Feasterville (B); (Durham); (Holicong).

Corallorrhiza odontorhiza (Willd.) Nutt.

Damp, usually sandy or gravelly, woods; infrequent.

Durham (R–R); Revere (L); Beaver Creek (B); Haycock Mountain (Mc); (R. G. Bechdolt); Argus (B); Rockhill (L); Lumberville (L); Aquetong (L); Newtown (Vs–G); Penn Valley (J); (Springfield).

Malaxis unifolia Michx. ADDER'S MOUTH.

(*Microstylis unifolia* of Gray's Manual, ed. 7.)

Rocky woods; rare.

North of Springtown (John Cawley, July, 1911).

Liparis liliifolia (L.) Richard. TWAYBLADE.

Dry open woods; frequent except on Coastal Plain.

Monroe (R); Narrowsville (Bn); Ottsville (L); Buckwampum Mountain (L); Richlandtown (L); Finland (L); Milford Square (B); Rockhill (F); Rocky Ridge (W); Buckingham (Dr. Susan Parry); Buckmanville (L); Brownsburg (B); (Argus); (Pineville); (Center Bridge).

Liparis Loeselii (L.) Richard.

Damp open soil and thickets; infrequent.

Nockamixon (Ba); Finland (B); Lumberville (F); Yardley (A. B. Kauffman).

Aplectrum hyemale (Muhl.) Torr. PUTTYROOT. ADAM-AND-EVE.

(*A. spicatum* of Fretz's Flora.)

Humus of rich dry to somewhat damp woodlands; rare.

Woods near Deep Run (Bl–G, May 27, 1916); (Haycock); (Rockhill. According to information received from Dr. C. D. Fretz in 1923 this refers to West Rockhill Township, near Almont); (Jericho Hill).

PIPERACEAE (PEPPER FAMILY)

Saururus cernuus L. LIZARD'S TAIL.

Muddy shores, ditches and swamps; locally abundant.

Beaver Creek (R–R); Haycock Run (F); Weisel (B); Tohickon Park (F); Castle Valley (Me); Newtown (Va–G); Tullytown (J); Bristol (Bo).

SALICACEAE (WILLOW FAMILY)

Salix nigra Marsh. BLACK WILLOW.

Banks and shores of streams and ponds; common along the Delaware River, occasional elsewhere.

Narrowsville (M); Spinnerstown (L); Sellersville (F); Point Pleasant (F); Rushland (L); Morrisville (Dr); Tullytown (Ba); Bristol (B); Andalusia (L).

***Salix pentandra** L. BAY-LEAVED WILLOW.

A rare escape from cultivation.

One specimen in the Philadelphia Botanical Club collection is labelled, "Bank of Delaware River, Bucks Co., Pa., (Ma, 1865)."

The exact locality cannot be definitely determined, although it is likely that the plant came from Bensalem Township where Martindale did most of his collecting in Bucks County.

Salix lucida Muhl. SHINING WILLOW.

Swamps and wet banks and shores; rare.

Springfield Township (F); Emilie (L).

***Salix alba** L. WHITE WILLOW.

Alluvial banks and shores; naturalized from Europe; not very frequent.

Rockhill (F, May, 1881); (Sellersville).

***Salix alba** L., var. **vitellina** (L.) Koch.

Similar situations as preceding; frequent.

Pleasant Valley (L); Almont (B); Buckmanville (L).

***Salix fragilis** L. CRACK WILLOW.

Naturalized in fence-rows and along ditches and streams; occasional.

Ottsville (B); Spinnerstown (L); Rockhill (B); Sellersville (F); Bristol (Dr).

A hybrid between this and *S. alba* was found at Monroe (R–R).

***Salix babylonica** L. WEEPING WILLOW.

Extensively cultivated and sometimes established; not frequent.

Revere (L); Sellersville (F).

Salix longifolia Muhl. SAND BAR WILLOW.

(*S. fluviatilis* of authors, not Nutt.; *S. interior* Rowlee).

Sand bars and sandy alluvium along the Delaware River; locally abundant.

Monroe (R–R); Kintnersville (R–R); Point Pleasant (F); Lumberville (L); Brownsburg (L); Washington's Crossing (L); Morrisville (L); Tullytown (B); Bristol (Dr).

Salix cordata Muhl.

Along streams and in alluvial soil; common.

Riegelsville (L); Nockamixon (L); Narrowsville (M); Spinnerstown (L); Sellersville (F); Point Pleasant (F); Neshaminy

(L); Hartsville (Dr); New Hope (Sg); Washington's Crossing (L); Morrisville (B); Tullytown (Ba).

Salix myricoides Muhl.

(*S. cordata,* var. *myricoides* of Gray's Manual, ed. 7.) Regarded as a hybrid between *S. cordata* and *S. sericea.*

Wet places; rather frequent.

Narrowsville (P); Sellersville (F); Neshaminy (L); Grenoble (L); Tullytown (Ba).

Salix discolor Muhl. GLAUCOUS WILLOW.

Swamps, moist banks and meadows; not rare.

Narrowsville (T); Pleasant Valley (B); Finland (L); Spinnerstown (L); Rockhill (F) (V) (M); New Hope (Sg).

[**Salix petiolaris** Sm.

A rather rare and widely scattered species reported from Sellersville. The material forming the basis for this record has been re-identified as *S. cordata* and *S. myricoides.*]

Salix humilis Marsh. PRAIRIE WILLOW.

Dry, sterile soil; frequent.

Haycock Mountain (Mc); Spinnerstown (L); Rockhill (B) (F); Argus (C); Dublin (L); Point Pleasant (B); Hartsville (L); Roelofs (L); Buckmanville (L); Morrisville (L); Bristol (B); (Sellersville).

Salix alpina. Walt. DWARF GRAY WILLOW.

(*S. tristis* Ait.). Rhodora, xvii. 136 (1915).

Borders of hillside thickets, mostly in dry soil; rare.

Upper Black Eddy (Tr–P); Revere (L); Rockhill (B) (F); Argus (F).

Salix sericea Marsh. SILKY WILLOW.

Wet meadows, swamps and banks; frequent.

Buckwampum Mountain (R–R); Bridgeton Township (T); East Rockhill Township (F); Spinnerstown (L); Almont (L); Neshaminy (L); Buckingham (L); Rushland (L); Grenoble (L); Tullytown (Ba); (Argus); (Sellersville).

Salix Bebbiana Sarg.

(*S. rostrata* Richards.) Rhodora, xxvi. 122 (1924).

Dry or moist soil, sometimes in woods and thickets; not frequent.

Bursonville (L); Rockhill (B); Almont (L); Sellersville (F); (Perkasie); (Point Pleasant).

***Salix purpurea** L. PURPLE WILLOW.

Sparingly escaped from cultivation where it was grown for basket material; locally abundant in low ground.

Quakertown (F, possibly a cultivated specimen); Rockhill (B); Tullytown (L); (Bensalem).

***Salix Caprea** L. GOAT WILLOW.

An escape from cultivation; rare.

Spinnerstown (L); Buckmanville (L).

Populus alba L. WHITE POPLAR.

An introduced plant; occasionally spontaneous.

Telford (B); Neshaminy (B).

Populus tremuloides Michx. AMERICAN ASPEN.

Light sandy or gravelly soil; frequent.

Riegelsville (L); Nockamixon (Fo); Revere (L); Buckwampum Mountain (L); Spinnerstown (L); Hagersville (B); Rockhill (M); Sellersville (F); Glen Lake (Bn); (Argus); (Mechanicsville).

When not in leaf this tree can be identified by its smooth buds and the following species, *P. grandidentata,* can be told by its gray, pubescent buds.

Populus grandidentata Michx. LARGE-TOOTHED ASPEN.

Rich woods and borders of streams; frequent.

Revere (L); Buckwampum Mountain (L); Pleasant Valley (B); Richlandtown (L); Spinnerstown (L); Hagersville (B); Rockhill (M); Point Pleasant (L); Grenoble (L); Glen Lake (Bn); Penns Park (L); Roelofs (L); Tullytown (B); Bristol (B); (Perkasie); (Sellersville).

***Populus candicans** Ait.

Low ground; rare.

Monroe (R–R); Pleasant Valley (B) (L); Geryville (L); (Argus); (Bedminster).

This is the Balm of Gilead, an introduced tree of uncertain origin. It is also of uncertain status taxonomically.

***Populus balsamifera** L. COTTON WOOD.

(*P. deltoides* of Gray's Manual, ed. 7.) Journ. Arnold Arb. i, 62 (1919). The *P. balsamifera* of American authors, not L., is now considered to be properly named *P. tacamahacca* Mill. (Balsam Poplar) and is a tree of the Far North.

Occasionally established. Yardley (L).

***Populus nigra** L.

(*P. hudsonica* Michx.)

A tree of early European introduction; rarely established.

Riegelsville (Bn, September 4, 1892).

***Populus nigra** L., var. **italica** DuRoi. LOMBARDY POPLAR.

(*P. dilatata* of Fretz's Flora.)

A native of Asia, introduced by way of Europe; occasionally established.

Riegelsville (L); Sellersville (F); Point Pleasant (L); Rockhill).

MYRICACEAE (SWEET GALE FAMILY)

Myrica caroliniensis Mill. BAYBERRY.

(This was the original spelling employed by Miller, Gard. Dict., ed. 8 (1768) and not *carolinensis* as found in the manuals.) Sterile soil on Coastal Plain; rare.

Bristol (B, July 8, 1927, and October 13, 1928).

Myrica asplenifolia L. SWEET FERN.

Sterile rocky and sandy soils; locally abundant.

Durham (B); Springfield (F); Buckingham (K); Bycot (K); Bristol (B).

JUGLANDACEAE (WALNUT FAMILY)

Juglans cinerea L. BUTTERNUT. WHITE WALNUT.

Rich wooded hillsides and on lowlands; frequent in upper end.

Monroe (R–R); Ottsville (L); Argus (J); Point Pleasant (L).

Juglans nigra L. BLACK WALNUT.

Rich woods or open soil; frequent.

Monroe (R–R); Finland (L); Sellersville (B); Aquetong (K); Neshaminy Falls (M).

Carya ovata (Mill.) K. Koch. SHAG-BARK HICKORY.

(*Hicoria ovata* (Mill.) Britton.)

Rich moist soil of hillsides and valleys; common.

Monroe (R–R); Ottsville (B); Rockhill (M); Almont (L); Sellersville (M) (F); Telford (B); Danboro (B); Neshaminy (Mc); New Hope (B).

Carya laciniosa (Michx. f.) Loud. KING NUT.

(*Hicoria laciniosa* (Michx. f.) Sarg.)

Moist rich bottomlands or fertile hillsides; becoming rare and local.

Ottsville (L); Quakertown (Bl); Sellersville (M); Telford (B); (Ridge Valley); (Rockhill); (Bedminster); (Pipersville).

Carya alba (L.) K. Koch. MOCKER NUT.

(*Hicoria alba* (L.) Britton).

Rich moist rather open woods and slopes; locally abundant.

Monroe (R–R); Sellersville (F) (M); Grenoble (L); New Hope (B).

Carya glabra (Mill.) Spach. PIGNUT HICKORY.

(*Hicoria glabra* (Mill.) Britton.)

Dry woodlands, sometimes in moist situations; frequent.

Monroe (R–R); Sellersville (F) (M); Emilie (B); (Solebury).

Carya cordiformis (Wang.) K. Koch. BITTER NUT.

(*Hicoria minima* (Marsh.) Britton.)

Moist rich woods and banks of streams; scattered, solitary and very local.

Narrowsville (K); Rockhill (M); Sellersville (M).

BETULACEAE (BIRCH FAMILY)

Corylus americana Walt. HAZELNUT.

Hillsides, thickets and borders of woods; frequent in upper end.

Nockamixon (R–R); Bridgeton Township (J); Springtown (L); Shelly (B); Finland (B); Almont (B); Rockhill (M) (B).

Corylus cornuta Marsh. BEAKED HAZELNUT.

(*C. rostrata* Ait.)

Thickets and woodland borders in hilly places; rare.

Durham Furnace (R); Rockhill (F); Point Pleasant (L); Center Bridge (B); Brownsburg (L).

This species can easily be distinguished from the preceding at flowering time by its sessile catkins.

Ostrya virginiana (Mill.) K. Koch. HOP HORNBEAM.

Dry to moist shaded slopes and ridges; frequent except in lower end.

Narrowsville (J) (L); Revere (L); Shelly (B); Milford Square (F); Sellersville (F); Point Pleasant (P) (Bn); Warrington (L); Rushland (V & L); Grenoble (L); New Hope (Sg); (Rockhill).

Carpinus caroliniana Walt. BLUE OR WATER BEECH.

In swamps and along streams; frequent.

Bridgeton Township (T); Springtown (B); Milford Square (L); Rockhill (M); Pipersville (F); New Hope (Sg); Aquetong (L).

Betula lenta L. SWEET BIRCH.

Rich open soil and dry rocky woods and hillsides; frequent except on Coastal Plain.

Narrowsville (L); Buckwampum Mountain (L); Haycock Mountain (L); Springtown (L); Finland (L); Rockhill (F); Telford (B); Doylestown (Me); Aquetong (L); Ingham Spring, Solebury Township (Bt); Roelofs (L); Richboro (L); Hulmeville (B).

[**Betula lutea** Michx. f. YELLOW BIRCH.

Reported from stations in Lehigh County within sight of Bucks County but it has never been detected on this side of the County line.]

Betula nigra L. RIVER BIRCH.

Swamps and stream banks; locally very common.

Narrowsville (M); Ottsville (B); Pipersville (L); Point Pleasant (L); Forks of Neshaminy (Bn); Rushland (L); Morrisville (L); Tullytown (B); Bristol (B); Andalusia (L).

Betula populifolia Marsh. WHITE OR GRAY BIRCH.

Moist soil along streams and ponds, also on hillsides; frequent.

Springtown (F); Buckwampum Mountain (L); Argus (L); Bedminster (F); Morrisville (L); Penn Valley (C); Turkey Hill (L); Fallsington (L); Tullytown (B); Bristol (B); (Bensalem).

Alnus rugosa (DuRoi) Spreng. SMOOTH ALDER.

Wet ground; frequent.

Nockamixon (P); Spinnerstown (B); Rockhill (B); Almont (B); Argus (B); Sellersville (F); Feasterville (B); Croydon (B).

Wiegand, in Flora of the Cayuga Lake Basin, p. 177 (1926), credits the specific name to Ehrhart on the basis that its publication by DuRoi was scarcely valid.

FAGACEAE (BEECH FAMILY)

Fagus grandifolia Ehrh. BEECH.

(*F. americana* Sweet.)

Rich uplands, slopes and moist bottom lands; frequent.

Nockamixon (R–R); Buckwampum Mountain (R–R); Finland (F); Rockhill (F); Telford (B); Point Pleasant (Wharton Huber); Rushland (V & L); Grenoble (L); Forks of Neshaminy (Bn); Langhorne (B).

Castanea dentata (Marsh.) Borkh. CHESTNUT.

Hillsides and well drained bottom lands; frequent until its virtual extinction by the blight; now occasionally reestablishing itself by means of suckers.

Buckingham Mountain (B); Ingham Springs, Solebury Township (Bt).

Quercus alba L. WHITE OAK.

Dryish or moist woods on hillsides and bottom lands; common.

Monroe (R–R); Rockhill (K); Argus (K); Aquetong (K); Neshaminy (Mc).

Quercus stellata Wang. POST OAK.

Dry sandy or rocks soil; rare and local.

Furlong (B); Carversville (F); Penn Valley (C); Turkey Hill (L).

Quercus bicolor Willd. SWAMP WHITE OAK.

Rich soils of meadows and along streams and swamps; occasional.

Revere (L); Finland (L); Rockhill (K); Argus (K); Sellersville (F); Grenoble (L); Oxford Valley (B).

[**Quercus Muhlenbergii** Engelm.

A very rare oak in southeastern Pennsylvania. It was reported from Sellersville but no specimens have been seen.]

Quercus prinoides Willd.

Dry to moist rocky or sandy soil; rare and local.

Ottsville (L); Plumstead Township (F); Turkey Hill (C); Penn Valley (C); (Nockamixon).

Quercus Prinus L. CHESTNUT OAK.

Dry hillsides and banks; locally frequent.

Nockamixon (J); West Rockhill Township (F); Sellersville (F); Aquetong (K); Brownsburg (E).

Quercus rubra L. RED OAK.

Usually somewhat dry, sandy or gravelly soils; frequent.

Narrowsville (Br); Ottsville (L); Telford (B); Bridgewater (C).

The Mossy Cup Oak (*Q. macrocarpa*) occurs at several places in Solebury Township. The parent trees of these oaks are growing in a yard near Center Bridge. These trees were doubtless planted there many years ago for they occur in rows with Kentucky Coffee Tree (*Gymnocladus dioica*). Who planted them or where they came from is not known.

According to C. S. Sargent (Rhodora, xvii. 39 (1915) and xviii. 48 (1916), the name *Q. rubra* L. should be applied to the southern tree recently called *Q. falcata* and *Q. digitata.* The far northern red oak would then become *Q. borealis* Michx. f., and our local red oak would become *Q. borealis* Michx. f., var. *maxima* (Marsh.) Sarg. The general opinion is that this transfer of the name *Q. rubra* is not based on very good evidence and is causing needless confusion. The well known and long used Linnaean name is retained here for our local red oak. According to House (N. Y. State Mus. Bul. lx. 243 (1923)) the far northern red oak is *Q. rubra* L., var. *borealis* but this tree does not come within our range.

Quercus palustris DuRoi. PIN OAK.

Borders of swamps and in meadows and rich moist alluvial soil; frequent.

Narrowsville (M); Rockhill (K) (B); Sellersville (F); Telford (B); Grenoble (L); New Hope (B).

Quercus exacta Trelease.

(*Q. imbricaria* × *palustris* Engelmann.) See check list of the Forest Trees of U. S., U. S. Dept. of Agriculture, Misc. Cir. 92, p. 96 (1927). Along edge of stream bank in meadow, Finland (B) (L).

This hybrid has been known at this station for a number of years. It is not known when or by whom the tree was discovered but material was sent to Dr. C. S. Sargent and other authorities by Dr. W. A. Kline, of Collegeville, Penn. See Dr. Kline's account in Forest Leaves of Pennsylvania, xvi, 120 (1918).

Quercus coccinea Muench. SCARLET OAK.

Dry sandy or gravelly soil; frequent.

Rattlesnake Hill, Durham Township (R–R); West Rockhill Township (F); Sellersville (B); Bristol (St).

Quercus velutina Lam. QUERCITRON.

Dry ridges and banks; occasional.

Monroe (R–R); Rockhill (F); Telford (B); Brownsburg (B).

Quercus falcata Michx. SPANISH OAK.

Sandy soil in lower end; rare.

Penn Valley (C); Bensalem (Ma).

Quercus ilicifolia Wang. BEAR OR BLACK SCRUB OAK.

Rocky hillsides or dry sandy soil; rare.

Kohl's Hill, Durham Township (R–R); East Rockhill Township (F); Penn Valley (C).

Quercus marylandica Muench. BLACK JACK OAK.

Dry, sterile usually sandy soil; local and not very abundant.

Lahaska (L); Furlong (B); Penn Valley (C); (Perkasie).

Quercus Rudkinii Britton.

(*Q. marilandica* × *phellos.*)

Low woods; rare.

Tullytown (C, September 3, 1897) and Tullytown (F, May 30, 1899).

Quercus phellos L. WILLOW OAK.

Moist sandy soil of the Coastal Plain where it is rather frequent; absent elsewhere.

Penn Valley (C); Tullytown (C); Emilie (B); Bristol (M) (F); Andalusia (L).

Quercus heterophylla Michx. f.

Low ground; rare.

Bristol (C, August 15, 1908); (Tullytown).

A hybrid whose parentage is not thoroughly understood. It is generally supposed that it is derived from *Q. phellos* and *Q. rubra.*

URTICACEAE (NETTLE FAMILY)

Ulmus fulva Michx. SLIPPERY ELM.

Rich soil along streams and hillsides; frequent except on Coastal Plain.

Riegelsville (L); Kintnersville (T); Rockhill (B); Argus (K); Sellersville (F); Point Pleasant (L); New Hope (Sg); Brownsburg (L); Morrisville (L).

Ulmus americana L. AMERICAN OR WHITE ELM.

Rich moist woods, also on upland situations; frequent.

Haycock Mountain (L); Springtown (We); Riegelsville (L); Rockhill (M); Furlong (Dr); Tullytown (B).

Celtis occidentalis L. SUGARBERRY. HACKBERRY.

Fence rows, stream banks and wooded slopes; occasional.

Ottsville (B); Springtown (B); Sellersville (B); Point Pleasant (L); Brownsburg (B); Feasterville (B); Hulmeville (B).

This is a tree exhibiting much variation in size, form and texture of foliage and shape of fruit but these variations are not well understood.

A form with acute or short acuminate leaves, recognized by some writers as *C. canina* Raf., was found along the Delaware River at Riegelsville (L, May 12, 1909), and Ottsville (B, September 19, 1931). These trees were quite large.

Another form with subglobose fruit and leaves rough on the upper surface known to some writers as *C. crassifolia* Lam. has been found at Finland (L); Sellersville (F); Richboro (L); and Buckmanville (L).

A specimen with short pedicels, less than twice as long as the drupe, regarded by some authors as *C. georgiana* Small, was found at Sellersville (F).

***Cannabis sativa** L. HEMP.

Waste places; infrequent.

Sellersville (B, October 21, 1917).

Humulus Lupulus L. COMMON HOP.

Fence rows, meadows and waste places; infrequent.

Springfield Township (F); Tohickon Creek (Gr).

***Humulus japonicus** Sieb. & Zucc.

Escaped from cultivation to meadows, roadsides and waste places; infrequent.

Sellersville (F); Doylestown (B); Morrisville (B); Eddington (B).

***Maclura pomifera** (Raf.) Schneider. OSAGE ORANGE.

Hedges and thickets; rarely spontaneous.

Bycot (Dr, June 14, 1891).

***Broussonetia papyrifera** (L.) Vent. PAPER MULBERRY.

(*Papyrius papyrifera* (L.) Kuntze.

An escape from cultivation; rare.

Well established at Brownsburg (L, November 1, 1931).

Morus rubra L. RED MULBERRY.

Rich rather moist soil; occasional.

Narrowsville (M); Revere (L); Ottsville (L); Rockhill (F); Croydon (K).

***Morus alba** L. WHITE MULBERRY.

Spontaneous in fence rows, borders of woods and waste places; occasional.

Telford (B); Hilltown (F); Hulmeville (B); Bristol (Dr).

Urtica procera Muhl.

(*Urtica gracilis* of authors, not Ait.)

Rhodora, xxviii. 191–199 (1926).

Low ground including roadsides and waste places; frequent.

Nockamixon (F); Erwinna (L); Point Pleasant (L); Lumberville (Me); Morrisville (Ba).

The real *U. gracilis,* according to Fernald, is a northern species which does not come south into our area.

***Urtica dioica** L. STINGING NETTLE.

Waste places; occasional.

Argus (F); Point Pleasant (B).

Laportea canadensis (L.) Gaud. WOOD NETTLE.

(*Urticastrum divaricatum* Ktze.)

Damp rich woods; frequent.

Buckwampum Mountain (R–R); Rockhill (F); Telford (B); Tohickon Creek (Gr); Point Pleasant (L); Doylestown (Me); Tullytown (B).

Pilea pumila (L.) Gray. RICHWEED. CLEARWEED.

Damp shaded situations and wet rocks; common.

Monroe (R–R); Weisel (Sm); Rockhill (F); Sellersville (F); Point Pleasant (B); Neshaminy (Mc); Jamison (Dr); Morrisville (B); Tullytown (B).

Boehmeria cylindrica (L.) Sw. FALSE NETTLE.

Wet soil in woods or open places; common.

Durham Furnace (B); Narrowsville (G); Rockhill (F); Doylestown (Me); Point Pleasant (B); Lumberville (B); Morrisville (Ba); Fallsington (L); Bristol (L); Andalusia (L).

The specimens from Point Pleasant, Lumberville, Morrisville and Tullytown are more like the Coastal Plain form and are probably intermediate between the typical species and the form known as *B. cylindrica*, var. *Drummondiana* Wedd. which is a Coastal Plain variety. Rhodora, xii. 10 (1910).

Parietaria pennsylvanica Muhl. PELLITORY.

Cliffs and shaded banks; locally abundant.

Nockamixon (P) (Bn); Ottsville (L); Sundale (L); Sellersville (F); Pipersville (L); Point Pleasant (L).

SANTALACEAE (SANDALWOOD FAMILY)

Comandra umbellata (L.) Nutt. BASTARD TOAD-FLAX.

Dry fields and thickets; widely scattered but nowhere very abundant.

Narrowsville (Bn); Sellersville (F); Telford (B); Dublin (L); Buckingham Valley (B); Yardley (L); Turkey Hill (L); Penn Valley (C).

LORANTHACEAE (MISTLETOE FAMILY)

Phoradendron flavescens (Pursh.) Nutt.

On *Nyssa sylvatica* branches; very rare.

Yardley (L, September 27, 1924).

This southern plant formerly grew in many places in New Jersey. Its northernmost station was in Monmouth County. It can still be found in a few scattered localities in that state.

Its discovery at Yardley was quite by chance. Mr. R. R. Dreisbach and Mr. Bayard Long were exploring the region and

were commenting on what new things should be looked for in connection with the plant associations found there. Finally Mr. Long suggested that *P. flavescens* might be *found* there and Mr. Dreisbach in response to the suggestion climbed the largest specimen of *Nyssa sylvatica* in sight and was rewarded with the discovery of this rare parasite.

ARISTOLOCHIACEAE (BIRTHWORT FAMILY)

Asarum canadense L. WILD GINGER.

Rich rocky woods; frequent throughout County except on Coastal Plain where it occurs occasionally.

Nockamixon (T) (C) (Pr); Bridgeton Township at Ringing Rocks (L); Ottsville (L); Quakertown (L); Milford Square (F) (Pr); Finland (F); Trumbauersville (F); Argus (B); Point Pleasant (F); Pipersville (L); Doylestown (Me); Edison (Fo–P); Center Bridge (B); New Hope (Va–G); Tullytown (B).

Asarum canadense L., var. **reflexum** (Bicknell) Robinson.

(*A. reflexum* Bicknell.)

Similar situations as species; infrequent.

Ridge Valley (F); Sellersville (F) (Rockhill).

Aristolochia Serpentaria L. VIRGINIA SNAKEROOT.

Rich, often rock woods; rare and local.

Monroe (R–R); Revere (Lewis Sigafoos–R); Rockhill (F); Doylestown (Me); Brownsburg (L); Aquetong (L).

POLYGONACEAE (BUCKWHEAT FAMILY)

***Rumex Patientia** L. PATIENCE DOCK.

Established in waste places and fields; rare.

Rockhill (W, June 21, 1908).

***Rumex altissimus** Wood.

Established along railroad siding; rare.

Sellersville (F, July 10, 1898, and June 16, 1901).

Plant was extinct at this station when sought for by Dr. C. D. Fretz in 1924.

***Rumex crispus** L. YELLOW DOCK.

Cultivated and waste ground; frequent.

Dublin (L); Neshaminy (Mc); New Hope (B); Fallsington (Dr); Oxford Valley (L); Bristol (Dr).

***Rumex obtusifolius** L. BITTER DOCK.

Fields, roadsides and waste places; occasional.

Doylestown (Me); Neshaminy (Mc); New Hope (B); Croydon (Dr).

***Rumex sanguineus** L.

Established in waste places; rare.

Sellersville (F); Dublin (L).

***Rumex pulcher** L.

Ballast and waste ground; rare.

Penn Valley (M, August, 1897).

***Rumex Acetosella** L. SHEEP SORREL.

Cultivated ground, roadsides, and waste places; a common weed.

Pleasant Valley (F); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc); Bristol (L).

Polygonum aviculare L. KNOTWEED.

Waste places and cultivated ground; common.

Monroe (R–R); Telford (B); Doylestown (Me); Neshaminy (Mc); Traymore (L); Yardley (L); Morrisville (B); Bristol (B).

The Yardley (L) specimen is var. *crassifolium* with obscurely wrinkled, shining achenes and the leaves somewhat thickened and spatulate.

Polygonum erectum L.

Fence rows, roadsides and waste places; locally abundant.

Chalfont (L); Doylestown (Me); Lumberville (L); Tullytown (B).

Polygonum tenue Michx.

Dry sterile situations; frequent.

Ottsville (B); Argus (B); Sellersville (F); Telford (B); Doylestown (Me); Carversville (L); Morrisville (Dr); Tullytown (B).

Polygonum lapathifolium L.

Gravelly soil along the Delaware River; occasional.

Riegelsville (Pr); Point Pleasant (L); Lower Black Eddy (L); Brownsburg (L).

Polygonum coccineum Muhl.

(*P. Muhlenbergii* of Gray's Manual, ed. 7.) Rhodora, xxxvii, 127 (1925).

Borders of ponds, along streams and in marshes; frequent.

Narrowsville (Bn); Point Pleasant (L); Doylestown (Me); Brownsburg (L); Yardley (L); Penn Valley (B); Penns Manor (B); Tullytown (L); Bristol (St).

[Polygonum pennsylvanicum L.

A Coastal Plain species so far not found in the County.]

Polygonum pennsylvanicum L., var. **laevigatum** Fernald.

(*P. pennsylvanicum* of Fretz's Flora.) Rhodora, xix. 70 (1917).

Moist rich open soil; frequent.

Monroe (R–R); Upper Black Eddy (Tr–P); Perkasie (B); Sellersville (F); Telford (B); Lumberville (L); Washington's Crossing (Me); Yardley (L); Morrisville (L); Bristol (L).

Some of the river shore specimens are flat in habit and may represent a different variety.

Polygonum Hydropiper L. Smartweed. Water Pepper.

Wet rich open soil; frequent.

Monroe (R–R); Sellersville (F); Telford (B); Lumberville (L); Washington's Crossing (L); Yardley (L); Oxford Valley (L).

Polygonum punctatum Ell. WATER SMARTWEED.

(*P. acre* of Gray's Manual, ed. 7, in part.)

Borders of ponds, swamps and in wet open soil and open woods; common.

Riegelsville (Pr); Richlandtown (B); Quakertown (Pr); Sellersville (F); Point Pleasant (L); Doylestown (Me); Neshaminy (Mc); Woodbourne (L); Brownsburg (L); Washington's Crossing (Me); Yardley (L); Morrisville (B); Fallsington (L); Tullytown (B); Eddington (B); Andalusia (Dr).

Polygonum robustius (Small) Fernald.

(*P. acre* of Gray's Manual, ed. 7, in part.)

Rhodora, xxiii. 147 (1921).

Larger marshes and swales; local.

Quakertown (L); Tullytown (B); Bristol (L).

***Polygonum orientale** L. PRINCE'S FEATHER.

Escaped from cultivation to waste places; occasional.

Nockamixon (R–R); Sellersville (F); Doylestown (Me).

***Polygonum Persicaria** L. LADY'S THUMB.

Waste places, roadsides and cultivated ground; common.

Upper Black Eddy (Tr–P); Telford (B); Doylestown (Me); Lumberville (L); Neshaminy (Mc); Brownsburg (B).

Polygonum hydropiperoides Michx. MILD WATER PEPPER.

Wet places; common.

Ottsville (B); Shelly (B); Argus (B); Sellersville (F); Point Pleasant (L); Morrisville (L); Tullytown (Dr); Bristol (L).

Polygonum virginianum L.

Rich soil in woodlands and thickets; common.

Monroe (R–R); Sellersville (F); Point Pleasant (B); Doylestown (Me); Washington's Crossing (Me); Yardley (Me); Morrisville (B); Hulmeville (B).

Polygonum arifolium L. HALBRED-LEAVED TEAR-THUMB.

Low woods, thickets and swamps; common.

Upper Black Eddy (Tr–P); Quakertown (Pr); Sellersville (F); Doylestown (Me); Neshaminy (Mc); Yardley (Mc); Tullytown (B); Andalusia (L).

Polygonum sagittatum L. Arrow-leaved Tear-thumb.

Swamps, ditches and wet meadows; common.

Monroe (R–R); Pleasant Valley (B); Sellersville (F); Telford (B); Doylestown (Me); Yardley (Me).

***Polygonum Convolvulus** L. Black Bindweed.

Fields, roadsides and waste grounds; frequent.

Nockamixon (J); Ottsville (L); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc); Bristol (Dr).

[**Polygonum cilinode** Michx.

A northern plant reported from Tullytown but no material has been found to verify this record.]

Polygonum scandens L. Climbing False Buckwheat.

Open woods, thickets and clearings in moist soil; frequent.

Durham Furnace (F); Sellersville (F); Doylestown (Me); Neshaminy (L); Washington's Crossing (Me); Penns Manor (F); Feasterville (B).

Polygonum cristatum Engelm. & Gray.

(*P. dumatorum*, f. *cristatum* of Gray's Manual, ed. 7.)

Sandy or rocky woods and banks; rare.

Carversville (L); Brownsburg (L).

***Polygonum cuspidatum** Seib. & Zucc. Japanese Knotweed.

(*P. Zuccarinii* Small.)

A native of Japan rarely escaping from cultivation.

Penn Valley (W); Bristol (B); (Doylestown according to J. Kirk Leatherman but no herbarium material seen).

***Fagopyrum esculentum** Moench. Buckwheat.

Escapes from cultivation to fields, roadsides and along railroads but is not persistent; occasional.

Nockamixon (P); Sellersville (F); Doylestown (Me); Tullytown (B); Bristol (Dr).

CHENOPODIACEAE (goosefoot family)

***Chenopodium ambrosioides** L. Mexican Tea.

Waste soil, introduced from tropical America; frequent.

Ridge Valley (F); Telford (B); Lumberville (L); Washington's Crossing (Me); Yardley (L); Tullytown (B).

[Chenopodium ambrosioides L., var. **anthelminticum** (L.) Gray.

C. anthelminticum L. is reported from Quakertown, New Hope and Bristol. In view of the fact that no material covering these records was found and that this is a very inconstant variety, often not clearly distinct from the typical species, it is best to consider it here as an excluded variety.]

***Chenopodium Botrys** L. Jerusalem Oak. Feather Geranium.

Waste places, naturalized from Europe; not rare.

Durham Furnace (R–R); Nockamixon (J); Sundale (L); Sellersville (F); Doylestown (Me); (Bristol).

Chenopodium capitatum (L.) Asch. Strawberry Blite.

(*Blitum capitatum* L.)

Light and newly cleared soil; rare.

Weed in grounds of Doylestown Seminary (Susan Parry, 1873–1879).

***Chenopodium glaucum** L. Oak-leaved Goosefoot.

A weed of sandy and gravelly waste places; frequent.

Monroe (R–R); Sellersville (F); Doylestown (L); Point Pleasant (B); Lahaska (L); Yardley (L); Andalusia (Ma).

Chenopodium hybridum L. Maple-leaved Goosefoot.

Woods and waste places; frequent.

Nockamixon (J); (Br); Ottsville (L); Sellersville (F); Plumstead (Ma).

***Chenopodium album** L. Lamb's Quarters.

Fields and waste places; common.

Monroe (R–R); Neshaminy (Me); Washington's Crossing (Me); Yardley (L); Bristol (F).

***Chenopodium murale** L.

Waste places; occasionally introduced.

Revere (L); Sellersville (F); Doylestown (Me); Bristol (F).

***Chenopodium urbicum** L.

Waste places; rare.

Hilltown (F, August, 1880); (Richland).

Chenopodium Boscianum Moq.

Woods and thickets along the Delaware River; not common.

Narrowsville (J) (Bn); Ottsville (L); Point Pleasant (L); Lumberville (L); Brownsburg (L); (Quakertown).

[Chenopodium polyspermum L.

In the County according to Porter. This weed is very sparingly introduced in the Eastern States and no material is on hand to verify its occurrence in Bucks County.]

[Chenopodium leptophyllum Nutt.

This plant occurs in sandy or brackish soil near the coast. A Bristol record was based on a misidentified specimen of *C. album*.]

Atriplex patula L. Spreading Orache.

Waste ground; rare. Sellersville (F, July 17, 1882).

Atriplex patula L., var. **hastata** (L.) Gray.

Waste ground and fields; frequent.

Durham Furnace (R–R); Ottsville (L); Quakertown (Wi); Sellersville (F); Telford (B); Doylestown (Me); Yardley (L); (Andalusia).

***Salsola Kali** L., var. **tenuifolia** G. F. W. Mey. Russia Thistle.

(*S. Tragus* of authors, not L.)

Railroad ballast; rare. Telford (B, July 17, 1915).

AMARANTHACEAE (amaranth family)

***Amaranthus retroflexus** L. Green Amaranth. Pigweed.

Cultivated ground and waste places; common.

Durham (R–R); Sellersville (F); Doylestown (Me); Tullytown (B).

***Amaranthus hybridus** L. Pigweed.

(Includes *A. hybridus paniculatus* of Fretz's Flora.)

Waste ground and cultivated places; common.

Sellersville (F); Telford (B); Plumsteadville (Mo); Point Pleasant (L); Neshaminy (Mc); Grenoble (L); Washington's Crossing (Me); Wrightstown (B); Penns Manor (B); Bristol (B).

Amaranthus graecizans L. TUMBLE WEED.

Cultivated ground and waste places; common.

Shelly (F); Sellersville (F); Hagersville (B); Telford (B); Point Pleasant (B); Brownsburg (L); Yardley (L); Bristol (B).

***Amaranthus blitoides** Wats.

Roadsides and waste places; rare.

Quakertown (Bl, August 30, 1898).

***Amaranthus spinosus** L. THORNY AMARANTH.

Waste ground; rare.

New Hope (F); Tullytown (C); Bristol (B).

Acnida cannabina L. WATER HEMP.

Brackish shores of tidal streams; locally abundant.

Penns Manor (B); Tullytown (B); Bristol (F); Andalusia (Bn).

Acnida tuberculata Moq.

(*A. tamariscina tuberculata* (Moq.) Uline and Bray of Fretz's Flora.) Moist sandy alluvial shore, Delaware River, Point Pleasant (L, August 14, 1923); (Andalusia).

PHYTOLACCACEAE (POKEWEED FAMILY)

Phytolacca americana L. POKEWEED.

(*P. decandra* of Gray's Manual, ed. 7.) Rhodora, xvii. 180 (1915).

Old pastures, fields, woods and waste places, very often on burnt lands; frequent.

Monroe (R–R); Sellersville (F); Telford (B); Doylestown (Me); Brownsburg (L); Bristol (B).

NYCTAGINACEAE (FOUR O'CLOCK FAMILY)

***Oxybaphus nyctagineus** (Michx.) Sweet.

(*Allionia nystaginea* Michx.)

Waste ground; rare, as in introduction from farther westward. Bristol (F, May 30, 1913).

***Oxybaphus albidus** (Walt.) Sweet.

(*Allionia albida* Walt.)

Waste ground and ballast; rare, as an adventive eastward.

Bristol (F, September 16, 1898).

ILLECEBRACEAE (KNOTWORT FAMILY)

***Scleranthus annuus** L. KNAWEL.

Dry fields and waste ground; locally abundant.

Monroe (R–R); Sellersville (F); Wormansville (L); Washington's Crossing (L); Tullytown (B); Bristol (B); (Perkasie); (Point Pleasant); (New Hope); (Lahaska).

Anychia canadensis (L.) BSP. FORKED CHICKWEED.

Dry woods; common.

Narrowsville (Bn); Ottsville (B); Rockhill (J); Deep Run (F); Doylestown (Dr); Carversville (L); Grenoble (L); Brownsburg (L); Turkey Hill (L).

Anychia polygonoides Raf.

(*A. dichotoma* of Fretz's Flora.)

Dry woods and in open places; frequent.

Ottsville (B); Sellersville (F); Doylestown (Me); Carversville (L).

This is the pubescent form.

AIZOACEAE (CARPET WEED FAMILY)

***Mollugo verticillata** L. CARPET WEED.

Fields, banks, roadsides and waste ground; common.

Upper Black Eddy (Tr–P); Sellersville (F); Telford (B); Point Pleasant (B); Lumberville (L); Doylestown (B); Washington's Crossing (Me); Yardley (L); Morrisville (B); Bristol (B).

CARYOPHYLLACEAE (PINK FAMILY)

[Spergularia rubra (L.) J. & C. Presl.

(*Tissa rubra* of Fretz's Flora.)

Reported from Perkasie by Fretz. No material found to cover this record.]

Sagina decumbens (Ell.) T. & G. PEARLWORT.

(*S. apetala* of Fretz's Flora.)

Dry soil; rare.

Sellersville (F. L. Bassett); Silverdale (F).

Arenaria lateriflora L.

(*Moehringia lateriflora* (L). Fenzl. of Fretz's Flora.)

Dry banks and thickets; rare.

Bedminster Township (F, July, 1876).

***Arenaria serpyllifolia** L. THYME-LEAVED SANDWORT.

A weedy plant of cultivated ground and waste places; common.

Upper Black Eddy (Pr); Ottsville (B); Sellersville (F); Telford (B); Point Pleasant (B); Doylestown (Me); Bycot (B); New Hope (B); Tullytown (M).

Arenaria stricta Michx. ROCK SANDWORT.

(*A. Michauxii* of Fretz's Flora.)

On rocky ledges and dry banks; rare and local.

Nockamixon (F) (Li); (Point Pleasant).

Stellaria uliginosa Murr. MARSH CHICKWEED.

Swamps and wet ditches; frequent.

Pleasant Valley (F); Doylestown (B); Lumberville (R. E. Schuh); New Hope (Wi); Penn Valley (C); Tullytown (M).

Stellaria longifolia Muhl.

Moist grassy places; frequent.

Nockamixon (B); Beaver Creek (B); Milford Square (B); Spinnerstown (L); Sellersville (F); Doylestown (Me); Hartsville (Dr); Center Bridge (Fi); Woodbourne (J); Tullytown (J).

***Stellaria graminea** L.

Naturalized in dry or moist grassy situations; rare.

Silverdale (F); Sellersville (F); Buckingham Valley (B).

Stellaria pubera Michx. GREAT CHICKWEED.

Moist somewhat shaded rocky places; infrequent.

Milford Square (Pr); Perkasie (F); Almont (L); Sellersville (B); Doylestown (Me); Rushland (V); (Quakertown).

***Stellaria media** (L.) Cyrill. COMMON CHICKWEED.

A weed of cultivated and waste ground; everywhere common.

Sellersville (F); Doylestown (Me); New Hope (Sg); Tullytown (B).

Cerastium arvense L. FIELD CHICKWEED.

Dry or rocky places, mostly along the Delaware; locally abundant.

Nockamixon (F) (M) (C); Erwinna (L); Doylestown (Me); Brownsburg (L); Washington's Crossing (L); Morrisville (L).

[Cerastium arvense L., var. **oblongifolium** (Torr.) Hollick & Britton.

A plant chiefly of the serpentine barrens reported from New Hope but no material forming the basis of this record has been discovered.]

***Cerastium vulgatum** L. MOUSE-EAR CHICKWEED.

Roadsides, cultivated and waste ground; common.

Upper Black Eddy (Pr); Ferndale (L); Ottsville (B); Rich Hill (L); Spinnerstown (L); Sellersville (F); Neshaminy (M); Aquetong (K); Croydon (K).

[Cerastium viscosum L.

An introduced species reported from Bensalem by Martindale but excluded here for want of sufficient evidence.]

Cerastium nutans Ref. NODDING CHICKWEED.

(*C. longipedunculatum* Muhl.)

Moist rich soil mostly in shaded places; frequent.

Ottsville (L); Pleasant Valley (B); Milford Square (L); Rockhill (F); Sellersville (F); Pipersville (L); Point Pleasant (L); Doylestown (Me); Grenoble (L); Brownsburg (L).

***Agrostemma Githago** L. CORN COCKLE.

Grain fields, roadsides and sometimes in waste places; frequent.

Nockamixon (A. McNeill); Ottsville (B); Telford (B); Doylestown (Me).

***Lychnis coronaria** (L.) Desr. Mullein Pink.

Established along a roadside bank at Carversville (F) (B); (Lumberville—this is probably the same station.)

[Lychnis Flos-cuculi L.

Reported from Carversville and Morrisville but no material was found to verify these records.]

***Lychnis alba** Mill. White Campion.

Roadsides, waste places and ballast; frequent.

Sellersville (F); Doylestown (F); Neshaminy (Mc); Grenoble (L); Langhorne (B); Brownsburg (L); Emilie (B); (Springtown).

Silene antirrhina L. Sleepy Catchfly.

Dry open woods, waste places and cultivated ground; frequent.

Narrowsville (M); Upper Black Eddy (Pr); Ottsville (B); Sellersville (F); Aquetong (K); Lahaska (L); Brownsburg (L).

***Silene Armeria** L. Sweet William Catchfly.

Spontaneous in gardens and waste places; rare.

Sellersville (F); Tullytown (P); (Buckingham).

***Silene noctiflora** L.

Waste places and cultivated ground; occasional.

Uhlertown (Me); Sundale (L); Sellersville (F); Telford (B); Morrisville (L); (Andalusia).

Silene stellata (L.) Ait. f. Starry Campion.

Woods and shaded banks; frequent except in lower districts.

Ottsville (L); Argus (B); Deep Run (F); Tohickon Park (F); Carversville (L); Doylestown (Me); Turkey Hill (B).

***Silene latifolia** (Mill.) Britten & Rendle.

Waste places, fields, meadows and woods; infrequent.

Sellersville (F); Doylestown (Me); Buckmanville (L); Yardley (L); Fallsington (Dr).

***Saponaria officinalis** L. Soapwort. Bouncing Bet.

Roadsides and waste places; common.

Nockamixon (P); Ottsville (L); Sellersville (F); Pipersville (F); Doylestown (Me); Neshaminy (Mc); Bristol (Dr).

***Saponaria Vaccaria** L. Cow-herb.

(*Vaccaria Vaccaria* Britton.)

Waste places or in grain fields; rare.

Sellersville (F); Telford (B).

***Dianthus barbatus** L. Sweet William.

An escape from gardens; rare.

Quakertown (F); Sellersville (F); Pipersville (F); (Ridge Valley).

***Dianthus Armeria** L. Deptford Pink.

Dry fields and roadsides; frequent.

Upper Black Eddy (Bn); Ottsville (L); Rockhill (F) (W); Perkasie (F); Telford (B); Doylestown (B); Neshaminy (Mc); Washington's Crossing (Dr); Morrisville (L).

PORTULACACEAE (purslane family)

Claytonia virginica L. Spring Beauty.

Dry to moist open woods and banks; common.

Monroe (R–R); Ottsville (L); Quakertown (A); Spinnerstown (L); Sellersville (F); Telford (Sm); Dublin (L); Pipersville (L); Doylestown (Me); Warrington (L); Rushland (L); New Hope (Sg); Tullytown (B); Penns Park (L); Janney (L); Hulmeville (B).

An orange-colored form has been found near Quakertown. Rhodora, xii. 22 (1914).

***Portulaca oleracea** L. Common Purslane.

A weed of cultivated and waste ground; common.

Monroe (R–R); Sellersville (F); Bristol (L).

A plant generally avoided by collectors on account of the difficulty of preparing good herbarium specimens.

***Portulaca grandiflora** Hook. Garden Portulaca.

Naturalized in waste ground; rare.

Blooming Glen (F, August 14, 1898).

CERATOPHYLLACEAE (HORNWORT FAMILY)

Ceratophyllum demersum L. HORNWORT.

Submerged in slow streams and ponds; frequent.

Weisel (B); Argus (B); Sellersville (F); Tullytown (B); Andalusia (L); (Penn Valley).

NYMPHAEACEAE (WATER LILY FAMILY)

Nymphozanthus advena (Ait.) Fernald. YELLOW POND LILY. SPATTERDOCK.

(*Nymphaea advena* Ait.) Rhodora, xxi. 183 (1919).

Ponds, marshes and swales; frequent.

Perkasie (L); Sellersville (P); Neshaminy (M); Turkey Hill (L); Andalusia (Dr); Croydon (Dr).

Nymphozanthus variegatus (Engelm.) Fernald.

(*Nymphaea advena,* var. *variegata* of Gray's Manual, ed. 7.) Rhodora, xxi. 183 (1919).

This plant is typified by its floating leaves and is regarded by some authors as a variety of the preceding species. It is more frequent northward. Similar situations; rare. Sellersville (F, August, 1880).

Nymphozanthus microphyllus (Pers.) Fernald. SMALL POND LILY.

(*Nymphaea microphylla* Pers. of Gray's Manual, ed. 7.) (*Nymphaea Kalmiana* of Fretz's Flora.) Rhodora, xxi. 183 (1919).

Rather deep, slow flowing waters of ponds and streams; rare.

Weisel (B, September 10, 1913); Warwick Township (Ma, August, 1866); Bristol (Ma, July 30, 1865).

Nymphaea odorata Ait. SWEET WATER LILY. WHITE WATER LILY.

(*Castalia odorata* of various authors.) Rhodora, xviii. 161 (1916).

Shallow ponds and streams; not common.

Haycock Township (F); Sellersville (B); Bristol (Ma); (Tohickon Creek, near Keelersville).

Brasenia Schreberi Gmel. WATER SHIELD.

(*B. purpurea* of Fretz's Flora.)

Ponds; rare.

Bristol (Chas. E. Smith, 1864); Bristol (Ma, 1865); Bristol (Bo, July 11, 1874).

No recent collections known.

RANUNCULACEAE (CROWFOOT FAMILY)

Ranunculus aquatilis L., var. **capillaceus** DC. WHITE WATER CROWFOOT.

(*Batrachium trichophyllum* Bosch.)

Slow-flowing streams and ponds; not common.

Revere (R–R); Sellersville (F); Penn Valley (J); Tullytown (B); Andalusia (L); (Applebachsville).

Ranunculus delphinifolius Torr. YELLOW WATER CROWFOOT.

Shallow waters of marshes, swamps and ponds; rare.

A single specimen from Nockamixon Swamps (F, no date).

Ranunculus laxicaulis (T. & G.) Darby. WATER PLANTAIN SPEARWORT.

(*R. obtusiusculus* Raf.)

In wet springy ground; rare.

Rocky Ridge (B); Rockhill Township (F); (near Quakertown).

The above stations undoubtedly all represent the same locality along Bethlehem Pike south of Rocky Ridge.

[**Ranunculus reptans** L.

(*R. Flammula* L., var. *reptans* (L.) Mey.) Rhodora, xix. 135–136 (1917).

A plant of gravelly or sandy shores reported from Solliday's Island in Moyer's Catalogue. No specimen has been discovered to verify this record.]

Ranunculus pusillus Poir.

Marshy places; rare.

Quakertown (F); Doylestown (Horace Lignear).

Ranunculus sceleratus L. CURSED CROWFOOT.

Wet ditches and bogs; not rare.

Rockhill (B); Sellersville (F); Tullytown (L); Croydon (K); Andalusia (L).

Ranunculus micranthus Nutt.

Open woods, often on rocks or stony slopes; infrequent.

Sundale (L); Erwinna (L); Sellersville (F); Rushland (V & L).

Ranunculus abortivus L. SMALL-FLOWERED CROWFOOT.

Shady hillsides and lowlands; common.

Durham Furnace (B); Durham (L); Nockamixon (Fo); Erwinna (L); Pleasant Valley (B); Spinnerstown (L); Telford (B); Silverdale (B); Dublin (B); Doylestown (Me); Warrington (L); Buckingham (L); Morrisville (L); Tullytown (B); Hulmeville (B).

Ranunculus recurvatus Poir. HOOKED CROWFOOT.

Damp woods; common.

Durham (F); Nockamixon (M); Buckwampum Mountain (F); Pleasant Valley (L); Spinnerstown (B); Milford Square (L); Rockhill (F); Sellersville (Me); Aquetong (K); Yardley (L); Fallsington (L); Tullytown (C).

[**Ranunculus fascicularis** Muhl.

Reported from Sellersville but material forming the basis for this record was *R. hispidus*.]

Ranunculus septentrionalis Poir. SWAMP BUTTERCUP.

Moist swales, meadows or open woods; frequent.

Revere (R–R); Quakertown (B); Milford Square (L); Spinnerstown (L); Finland (F); Argus (Bn); Penn Valley (C); Tullytown (L); Andalusia (L).

Ranunculus hispidus Michx.

Moist or dry open woods and thickets; frequent.

Durham (F); Revere (W); Ottsville (L); Springfield (F); Pleasant Valley (L); Rockhill (F); Finland (F); Argus (L); Sellersville (F); Danboro (L).

Ranunculus hispidus Michx., var. **falsus** Fernald.

The northern form with appressed pubescent stems.

Rhodora, xxii. 30 (1920).

Similar situations as species but less frequent.

Upper Black Eddy (B); Pleasant Valley (L); Jericho Hill (L).

Ranunculus repens L. Creeping Buttercup.

Possibly naturalized; rare.

Tullytown (F, Aug. 18, 1898); Bristol (F, June 17, 1892).

Ranunculus repens L., var. **pleniflorus** Fernald.

A double flowered form with leaf divisions subcordate and crenately lobed. Rhodora, xxi. 169 (1919).

Possibly an escape from cultivation; rare.

Erwinna (L); Tullytown (F).

Ranunculus pennsylvanicus L. f. Bristly Buttercup.

Wet open situations; rare.

Andalusia (Ma, 1865).

***Ranunculus bulbosus** L. Bulbous Buttercup.

Open woods, fields and roadsides; not rare.

Monroe (R–R); Pleasant Valley (Bn); Rich Hill (L); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc); Morrisville (Dr).

***Ranunculus acris** L. Tall Buttercup.

Naturalized in fields, meadows and waste places; common.

Monroe (R–R); Shelly (F); Rockhill (M)(W); Sellersville (F); Neshaminy (Mc); Penn Valley (C).

Thalictrum dioicum L. Early Meadow Rue.

Woods, thickets, rocky banks and moist slopes; frequent except on Coastal Plain.

Narrowsville (B)(M); Ottsville (B); Quakertown (L); Spinnerstown (L); Finland (L); Sellersville (F); Pipersville (L); Doylestown (Me); Center Bridge (Fi); New Hope (Sg).

Thalictrum revolutum DC.

(*T. purpurascens* of Fretz's Flora.)

Woodlands and banks; frequent.

Monroe (R–R); Uhlertown (Me); Quakertown (Bn); Sellersville (F); (Nockamixon).

Thalictrum polygamum Muhl. TALL MEADOW RUE.

Wet soil in meadows and along streams; frequent. Riegelsville (R–R); Upper Black Eddy (Tr–P); Rich Hill (B); Sellersville (F); Neshaminy (Mc); Bristol (Dr); Andalusia (L).

Anemonella thalictroides (L.) Spach. RUE ANEMONE.

Rather dry open woods and banks; common.

Upper Black Eddy (Tr–P); Quakertown (L); Spinnerstown (L); Finland (F); Sellersville (F); Telford (B); Doylestown (Me); Warrington (L); Rushland (L); Dolington (L); Jericho Hill (L); New Hope (Sg); Morrisville (L).

Hepatica americana (DC.) Ker. LIVERLEAF.

(*H. triloba* of authors.) Rhodora, xix. 45 (1917).

Open woods and banks; common.

Nockamixon (Pr) (Fo); Revere (W); Ottsville (L); Passer (B); Quakertown (L); Spinnerstown (L); Rockhill (M); Sellersville (F); Pipersville (L); Danboro (B); Erwinna (L); Point Pleasant (L); Doylestown (Me); Warrington (L); Bridge Valley (Dr); Aquetong (L); Dolington (L); Grenoble (L); New Hope (Sg); Brownsville (L).

Anemone riparia Fernald.

Along the Delaware in a few stations; rare.

Narrowsville (L); Point Pleasant (F).

Anemone virginiana L. TALL ANEMONE.

Meadows, woods and thickets; common.

Narrowsville (L); Nockamixon (J); Springtown (L); Finland (L); Telford (Sm); Point Pleasant (F); Doylestown (Me); Buckingham (L); Pineville (Fo); Brownsburg (L).

[**Anemone canadensis** L.

Reported from Doylestown but the record has not been verified.]

Anemone quinquefolia L. WOOD ANEMONE.

Low woods and along wooded banks and thickets; frequent.

Monroe (R–R); Revere (W); Erwinna (L); Quakertown (L); Spinnerstown (L); Finland (F); Rockhill (F); Sellers-

ville (F); Telford (B); Doylestown (Me); Warrington (L); Trevose (Dr); Yardley (L); Roelofs (L).

Clematis virginiana L. VIRGIN'S BOWER.

Woods, thickets and banks; frequent.

Monroe (R–R); Plumsteadville (F); Point Pleasant (L); Neshaminy (L); Telford (B); Yardley (Dr).

Clematis verticillaris DC. PURPLE CLEMATIS.

(*Atragene americana* Sims.)

Rocky woods and thickets; rare and local.

Monroe (R–R); Kintnersville (T); Tohickon (Mo); near Quakertown (Me); Point Pleasant (F); Brownsburg (B); (Bedminister).

Caltha palustris L. MARSH MARIGOLD.

Wet meadows and swamps; locally abundant.

Monroe (R–R); Bridgeton Township (B); Pleasant Valley (B); Quakertown (C)(Bn); Spinnerstown (L); Rockhill (M); Sellersville (F); Argus (C); Doylestown (Me); Croydon (B); (Haycock Mountain); (Bonair).

Trollius laxus Salisb. GLOBEFLOWER.

Boggy meadow; rare.

Springfield Township, near Pleasant Valley (Bn)(F).

***Helleborus viridis** L. GREEN HELLEBORE. CHRISTMAS FLOWER.

Established in fence rows and meadows; occasional.

Quakertown (Mo)(Ma); Rockhill (F); Sellersville (F); Plumsteadville (Mo).

Aquilegia canadensis L. WILD COLUMBINE.

Rocky woods and banks; frequent.

Durham Furnace (L); Trumbauersville (L); Milford Square (L); Sellersville (F); Telford (B); Pipersville (L); Point Pleasant (F); Edison (Fo); New Hope (Sg); Brownsburg (B).

***Aquilegia vulgaris** L.

An escape in woods, fields and roadsides; occasional.

Sellersville (F); Ottsville (L); Bedminsterville (L); Lahaksa (L); (Narrowsville).

[Delphinium Consolida L.

The material forming the basis for this record has been re-identified as *C. Ajacis* L.]

***Delphinium Ajacis** L. LARKSPUR.

Established along roadside; rare.

Sellersville (F, 1881).

Cimicifuga racemosa (L.) Nutt. BLACK SNAKEROOT. BLACK COHOSH.

Woods and thickets; frequent.

Monroe (R–R); Rich Hill (F); Sellersville (F); Erwinna (L); Doylestown (Me); Brownsburg (B); Feasterville (B).

Actaea alba (L.) Mill. WHITE BANEBERRY.

Rich woods and banks; frequent.

Nockamixon (F); Ottsville (L); Springtown (L); Rich Hill (B); Argus (J); Point Pleasant (L); Edison (Fo); Forks of Neshaminy (Bn); Warwick Township (Ma); Brownsburg (L).

Hydrastis canadensis L. GOLDEN SEAL.

Moist rich woods; rare.

Near Quakertown (F)(Bn); Rockhill (C); Rushland (L); New Hope (L).

MAGNOLIACEAE (MAGNOLIA FAMILY)

Magnolia virginiana L. LAUREL MAGNOLIA. SWEET BAY.

Swamps; locally abundant on Coastal Plain.

Yardley (L); Morrisville (B); Tullytown (C); Bristol (B).

Liriodendron Tulipifera L. TULIP TREE.

Woodlands; frequent.

Ringing Rocks, Bridgeton Township (F); Springtown (We); Rockhill (F); Sellersville (B); Hulmeville (B).

ANONACEAE (CUSTARD APPLE FAMILY)

Asimina triloba Dunal. PAPAW.

Rich moist soil; rare.

West Rockhill Township (F, April, 1881); Solliday's Island (Mo., 1867); (Argus); (Erwinna).

It is possible that the West Rockhill Township specimen covers the Argus record.

MENISPERMACEAE (MOONSEED FAMILY)

Menispermum canadensis L. MOONSEED.

Alluvial woods and banks; frequent.

Narrowsville (P); Upper Black Eddy (T); Uhlertown (Me); Ottsville (L); Quakertown (B); Rockhill (F); Leidytown (F); Curley Hill (B); Point Pleasant (L); Buckingham (L).

BERBERIDACEAE (BARBERRY FAMILY)

Podophyllum peltatum L. MAY APPLE. MANDRAKE.

Rich woods, thickets and banks; frequent.

Narrowsville (L); Quakertown (B); Milford Square (B); Finland (F); Fountainville (L); Doylestown (Me); Neshaminy (Mc); Buckmanville (L); Brownsburg (L).

Jeffersonia diphylla (L.) Pers. TWINLEAF.

Rich soil of woods and thickets; rare.

New Hope (Bn)(Sg).

Caulophyllum thalictroides (L.) Michx. BLUE COHOSH.

Rich woods and thickets; locally abundant except on Coastal Plain.

Nockamixon (Ba)(Pr); Quakertown (B); Bedminster (L); Tohickon Park (F); Ottsville (L); Sundale (L); Doylestown (Me); (Edison).

***Berberis vulgaris** L. COMMON BARBERRY.

Established in pastures and along fence rows; rare.

Near Doylestown (F, 1880); (Jericho Hill); (Bensalem).

***Berberis Thunbergii** DC.

Thickets; rare.

Morrisville (L, June 23, 1927); Hulmeville (B, May 30, 1931); (Doylestown according to J. Kirk Leatherman, but no herbarium material was seen).

LAURACEAE (LAUREL FAMILY)

Sassafras officinale Nees & Eb. SASSAFRAS.

(*S. variifolium* of Gray's Manual, ed. 7.) Rhodora, xx. 98 (1918).

Fence rows, old fields and borders of woods; common.

Nockamixon (M); Pleasant Valley (B); Rockhill (F); Point Pleasant (L); Neshaminy (Mc); Pineville (B).

Benzoin aestivale (L.) Nees. SPICE BUSH.

Moist soil in woods, thickets and fence rows; common.

Monroe (R–R); Ottsville (L); Haycock Mountain (L); Revere (F); Finland (L); Rockhill (F); Danboro (B); Doylestown (Me); Jamison (Dr); Grenoble (L); Buckmanville (L); Richboro (L); New Hope (Sg); Yardley (Me); Morrisville (L); Emilie (Dr); Croydon (L).

PAPAVERACEAE (POPPY FAMILY)

Sanguinaria canadensis L. BLOODROOT.

Dry or moist banks, thickets and open woods; common.

Noakamixon (C); Revere (W); Passer (B); Tohickon (L); Quakertown (L); Milford Square (L); Sellersville (F); Telford (B); Pipersville (L); Danboro (B); Doylestown (Me); Warrington (L); Jericho Hill (L); Buckmanville (L); New Hope (Sg); Brownsburg (L); Hulmeville (B).

***Chelidonium majus** L. CELANDINE.

Woods, roadsides, barnyards and waste ground; frequent.

Nockamixon (M); Ottsville (L); Sellersville (F); Point Pleasant (B); Aquetong (L).

***Papaver somniferum** L. COMMON POPPY.

Waste places; rare.

Sellersville (F, 1880 and 1923).

***Papaver Rhoeas** L.

Waste places, ballast and rubbish piles; occasional.

Sellersville (F); Plumsteadville (Mo); Doylestown (B); Buckmanville (L).

[Papaver dubium L.

Reported from the County but no specimens were found.]

***Argemone mexicana** L. MEXICAN POPPY.

Ballast and waste ground; rare.

Sellersville (F, 1880); Plumsteadville (Mo, 1867); (Bedminster).

FUMARIACEAE (FUMITORY FAMILY)

Adlumia fungosa (Ait.) Greene. CLIMBING FUMITORY.

An Alleghanian plant of rocky woods and thickets; rare.

Monroe (R–R); Quakertown (Ma); Rockhill (W) (F) (J) (M); Argus (B); Pipersville (L); (Narrowsville).

Dicentra Cucullaria (L.) Bernh. DUTCHMAN'S BREECHES.

Rich soil, especially deep leaf mold, in woods and thickets; frequent except on Coastal Plain.

Narrowsville (P); Kintnersville (L); Ottsville (L); Bridgeton Township (T); Sellersville (F); Tohickon Park (L); Furlong (Dr); Grenoble (L); New Hope (Sg); Brownsburg (L).

Dicentra canadensis (Goldie) Walp. SQUIRREL CORN.

Similar situations as preceding; less frequent.

Kintnersville (L); Narrowsville (P); Fretz P. O. (F); Bedminster (L) (F).

Corydallis sempervirens (L.) Pers.

Rocky hillsides; rare.

Nockamixon (C); Quakertown (Ma); Rockhill (F); (Argus).

Corydalis flavula (Raf.) DC.

Rocky woods and slopes; rare.

Carversville (Mo) (F); Doylestown (Me); New Hope (B); Brownsburg (Wi); (Yardley).

***Fumaria officinalis** L. FUMITORY.

Waste places; rare.

Sellersville (F, August, 1881).

CRUCIFERAE (MUSTARD FAMILY)

***Draba verna** L. WHITLOW GRASS.

Sandy soil of fields, roadsides and waste places; frequent along the Delaware, occasional elsewhere.

Narrowsville (Pr); Revere (W); Perkasie (B); Plumstead (F); Point Pleasant (L); Carversville (Gr); Doylestown (Me); Jericho Hill (L).

[Draba caroliniana Walt.

Reported from Point Pleasant by Dr. C. D. Fretz. In 1919 Dr. Fretz endeavored to re-discover the station and found that the locality he had in mind is on Bull's or Ellmaker's Island near Lumberville. This island is under New Jersey jurisdiction and the plant is unknown from Bucks County.]

***Lobularia maritima** (L.) Desv. SWEET ALYSSUM.

(*Koniga maritima* (L.) R. Br.)

Escaped from cultivation near cemetery, Sellersville (F, July 21, 1924).

***Thlaspi arvense** L. PENNY CRESS.

Fields, waste ground and ballast; occasional.

Rockhill (F); Telford (B); Traymore (L).

Lepidium virginicum L. WILD PEPPERGRASS.

Fields, roadsides and waste places; common.

Monroe (R–R); Sellersville (F); Telford (Sm); Ottsville (L); Neshaminy (Mc).

***Lepidium densiflorum** Schrad.

(*L. apetalum* of Fretz's Flora, and of Gray's Manual, ed. 7.)

Dry roadsides, waste ground and ballast; rare.

Point Pleasant (Bn); Doylestown (Me).

***Lepidium ruderale** L.

Waste places and roadsides; rare.

Point Pleasant (F, July 4, 1899).

***Lepidium campestre** (L.) R.Br. FIELD CRESS.

Fields, roadsides and waste ground; common.

Nockamixon (M); Ottsville (L); Sellersville (J) (F); Telford (Sm); Edison (Fo); Neshaminy (Mc); Morrisville (Dr).

***Capsella Bursa-pastoris** (L.) Medic. SHEPHERD'S PURSE.

A weed of fields, roadsides and waste places; common.

Durham Furnace (B); Bridgeton Township (T); Milford Square (B); Rich Hill (L); Telford (B); Doylestown (Me); Neshaminy (Mc); New Hope (B).

[Camelina sativa (L.) Crantz.

This plant became known fifty or more years ago as an introduced plant. After a time it disappeared entirely from our local area and only recently has made its re-appearance in a few localities near-by but not in Bucks County. There is an old record from Benjamin (South Perkasie) by Fretz but no herbarium material has been found to cover this record.]

***Camelina microcarpa** Andrz. FALSE FLAX.

Naturalized in fields, meadows, waste places and along roadsides; occasional.

Nockamixon (Se); Sellersville (F); Doylestown (Me); Edison (L); Penn Valley (F).

***Raphanus Raphanistrum** L. WILD RADISH.

Established as a weed in fields; occasional.

Doylestown (B); Bristol (B).

***Rhaphanus sativus** L. RADISH.

Common in cultivation and sometimes escaping in waste ground.

Bristol (B, July 13, 1931).

[Brassica alba (L.) BOISS.

(*Sinapis alba* L.)

An infrequent adventive reported from the County but no material is extant to prove its occurrence within the range of this treatment.]

***Brassica arvensis** (L.) Kaze. CHARLOCK.

Naturalized in fields and waste places; frequent.

Richlandtown (B); Telford (Sm); Dublin (L); Bristol (L).

***Brassica nigra** (L.) Koch. BLACK MUSTARD.

Naturalized in fields and waste ground; occasional.

Monroe (R–R); Point Pleasant (B).

***Brassica campestris** L. RUTABAGA.

Cultivated ground and waste places, possibly persisting only for a short time; occasional.

Nockamixon (Se); Ottsville (L); Pleasant Valley (B); Telford (B); Curley Hill (B).

B. oleracea L. (Cabbage), *B. Napus* L. (Rape) and *B. Rapa* L. (Turnip) are sometimes found in cultivated ground and on ballast but none of them persist for any great length of time and cannot be considered as permanently established.

***Conringia orientalis** (L.) Dumort. TREACLE MUSTARD.

About barn yards and waste ground; rare.

Perkasie (F); Telford (B); New Hope (B).

***Sisymbrium officinale** (L.) Scop. HEDGE MUSTARD.

Roadsides and waste places; occasional.

Point Pleasant (L.); Doylestown (Me).

***Sisymbrium officinale** (L.) Scop., var. **leiocarpum** DC.

Similar situations as preceding; common.

Applebachsville (L); Sundale (L); Ottsville (B); Blooming Glen (L).

***Sisymbrium altissimum** L. TUMBLE MUSTARD.

Fields, roadsides and waste places; rare.

Sellersville (F); Tohickon Park (F).

***Sisymbrium Thalianum** (L.) J. Gay. MOUSE-EAR CRESS.

(*Stenophargma Thaliana* (L.) Celak of Fretz's Flora.)

Open woods, old fields, roadsides and waste places; frequent.

Durham Furnace (B); Sellersville (F); Telford (B); Pipersville (L); Langhorne (B); Tullytown (B); Trevose (Dr).

***Hesperis matronalis** L. DAME'S VIOLET.

A native of Europe established along roadsides and fields; occasional.

Pleasant Valley (B); Quakertown (P); Sellersville (F); Dublin (L); Point Pleasant (B); Doylestown (Me); Washington's Crossing (L); Croydon (K).

***Erysimum cheiranthoides** L. WORM-SEED MUSTARD.

Roadside bankss and cultivated ground, apparently introduced; rare.

Richlandtown (B); Telford (Sm).

***Roripa sylvestris** (L.) Bess. YELLOW CRESS.

(*Radicula sylvestris* (L.) Druce.)

Wet or swamp ground and waste places; frequent.

Quakertown (Bl); Wyker's Island (F); Solliday's Island (F); Point Pleasant (L); Center Bridge (Fi); Washington's Crossing (Me) (Dr); Grenoble (L).

Roripa palustris (L.) Bess. MARSH CRESS.

(*Radicula palustris* (L.) Moench.)

Low moist soil or sometimes in shallow water; frequent.

Monroe (R–R); Shelly (B); Sellersville (B); Point Pleasant (L); Edison (L); Neshaminy (Mc); Washington's Crossing (Dr); Yardley (L); Morrisville (L); Oxford Valley (B); Bristol (C); Feasterville (B); Andalusia (L).

Roripa palustris (L.) Bess., var. **hispida** (Desv.) Rydb.

(*Radicula palustris,* var. *hispida* of Gray's Manual, ed. 7.)

Similar situations as preceding; less frequent.

Bristol (L); Andalusia (L).

***Nasturtium Nasturtium-aquaticum** (L.) Karst. WATER CRESS.

(*Radicula Nasturtium-aquaticum* of Gray's Manual, ed. 7.)

Brooks, ditches and spring heads; locally abundant.

Fairmount (Fy); Perkasie (F); Doylestown (Me); Neshaminy (Mc); Tullytown (D).

***Armoracia rusticana** Gaertn. HORSERADISH.

(*Radicula Armoracia* of Gray's Manual, ed. 7. *Roripa Armoracia* of Fretz's Flora.)

Established in moist, rich soil; frequent.

Monroe (R–R); Pleasant Valley (B); Sellersville (F); Churchville (B); Tullytown (M) (L); Morrisville (L); Andalusia (L).

***Barbarea vulgaris** R. Br. WINTER CRESS. YELLOW ROCKET.

(*B. Barbarea* (L.) Mac.M.)

Cultivated fields, roadsides and waste places; common.

Kintersville (A); Ottsville (B); Sellersville (F); Neshaminy (Mc); Brownsburg (B); Morrisville (B); Andalusia (L).

***Barbarea vulgaris R. Br., var. longisiliquosa** Carion.

(*B. stricta* of Gray's Manual, ed. 7.)

Rhodora, xi. 139 (1909).

Similar situations as preceding; less common.

Quakertown (B); Rockhill (F); Sellersville (B); Grenoble (L); Tullytown (L).

***Barbarea verna** (Mill.) Asch.

(*B. praecox* of Fretz's Flora.)

Cultivated fields and waste places, perhaps originally an escape from cultivation in some places; frequent.

South Perkasie (F); Sellersville (F); (Bn); Telford (B); Ottsville (L); Pipersville (L); Rushland (L); Morrisville (Dr); (Doylestown); (Penn Valley).

***Lunaria annua** L. HONESTY.

Cliffs of the Delaware; probably escaped from an old garden; rare.

Nockamixon (P, June 4, 1898).

Dentaria diphylla Michx.

Rich woods; rare.

Narrowsville (G, May 29, 1869) (T, May 15, 1920).

Dentaria heterophylla Nutt. TOOTHWORT.

Rich woods; rare.

Quakertown (F); Spinnerstown (L); Ottsville (L); Pipersville (L); two miles northwest of Point Pleasant (Tr–P).

Arabis glabra (L.) Bernh. TOWER MUSTARD.

Grassy field; rare.

Sellersville (F, June 10, 1912).

[Arabis hirsuta (L.) Scop.

Reported from Sellersville but no material has been found to cover this record.]

Arabis laevigata (Muhl.) Poir.

Dry rocky woods and banks; common.

Monroe (L); Nockamixon (Pr) (M); Buckwampum Mountain (F); Ottsville (L); Springtown (F); Rockhill (F); Bedminster (L); Pipersville (L); Point Pleasant (L); Doylestown (Me); Edison (Fo); Bridge Valley (Dr); Rushland (L); New Hope (Sg); Morrisville (L).

Arabis canadensis L. SICKLE-POD.

Rocky woods and banks; frequent.

Nockamixon (F); Ottsville (L); Shelly (B); Milford Square (L); Rockhill (F) (W); Curley Hill (B); Doylestown (Me); Carversville (L); Brownsburg (L).

CAPPARIDACEAE (CAPER FAMILY)

***Cleome spinosa** L. SPIDER-FLOWER.

Adventive in waste grounds; rare.

Tullytown (B); Bristol (F).

RESEDACEAE (MIGNONETTE FAMILY)

***Reseda Luteola** L.

Adventive along roadside; rare.

Pleasant Hill (F, July, 1867).

DROSERACEAE (SUNDEW FAMILY)

Drosera rotundifolia L. ROUND-LEAVED SUNDEW.

Bogs and moist sand; not frequent.

Buckwampum Mountain (R); Pleasant Valley (B); Quakertown (Bn); Bristol (L).

Drosera longifolia L. SPATULATE-LEAVED SUNDEW.

(*D. intermedia* Hayne.)

Wet sand and bogs; rare. Tullytown (F, September 17, 1898).

PODOSTEMACEAE (RIVER WEED FAMILY)

Podostemum ceratophyllum Michx. RIVER WEED.

On rocks in streams; rare and local.

On stones in Delaware River, Monroe (R–R, July, 1885); (Nockamixon); (Point Pleasant).

CRASSULACEAE (ORPINE FAMILY)

Penthorum sedoides L. DITCH STONECROP.

Wet ditches and low open ground; frequent.

Upper Black Eddy (Tr–P); Shelly (B); Steinsburg (Wi); Ridge Valley (F); Point Pleasant (B); Doylestown (Me); Buckingham (K) (J); New Hope (Va–G); Brownsburg (B).

Tillaea aquatica L.

Muddy shores of the Delaware River; rare.

Andalusia (L, October 23, 1917).

***Sedum acre** L. MOSSY STONECROP.

Naturalized in stony waste places and along roadsides; occasional.

Erwinna (L, May 15, 1927); (B, July 12, 1932).

Sedum ternatum Michx. WILD STONECROP.

Rocky banks and wooded slopes; rare.

Kintnersville (R–R); Buckingham Mountain (Ma, May, 1866).

***Sedum purpureum** Tausch. LIVE-FOREVER.

(*S. Telephium* of authors.)

Established along roadsides and rocky banks; occasional.

Nockamixon (P); Bedminster (F); Doylestown (Me); Lumberville (L).

Sedum roseum (L.) Scop. ROSEROOT.

A plant of the far North growing abundantly on the cliffs of the Delaware River near Top Rock at the Narrows in Nockamixon Township. Discovered there in 1867 by Dr. Thomas C. Porter and Dr. Traill Green and still found there. Late May is the time to find the plant in bloom.

SAXIFRAGACEAE (SAXIFRAGE FAMILY)

Saxifraga pennsylvanica L. SWAMP SAXIFRAGE.

Low meadows and swampy woods and thickets; frequent except in lower end.

Nockamixon (Hb–P); Pleasant Valley (F); Steinsburg (Wi); Spinnerstown (B); Argus (W); Almont (L) (J); Sellersville (F); Doylestown (Me).

Saxifraga virginiensis Michx. EARLY SAXIFRAGE.

Dry hillsides, rocky banks and ledges; common everywhere except on Coastal Plain.

Kintnersville (L); Ottsville (L); Spinnerstown (L); Quakertown (L); Telford (Sm); Tohickon (L); Erwinna (L); Dublin (B); Point Pleasant (Fo); Doylestown (Me); Warrington (L); New Hope (Sg); Brownsburg (L); Penns Park (L); Dolington (L); Washington's Crossing (Dr); Grenoble (L); Morrisville (L); Hulmeville (B).

Heuchera americana L. ALUM ROOT.

Dry rocky woods and thickets; frequent.

Monroe (R–R); Uhlertown (Me); Spinnerstown (L); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc); Hulmeville (B).

Mitella diphylla L. MITERWORT. BISHOP'S CAP.

Humus in damp woods and thickets; frequent except on Coastal Plain.

Narrowsville (Li); Kintnersville (L); Ottsville (L); Pleasant Valley (Bn); Tohickon (Me); Spinnerstown (B); Milford Square (L); Finland (F); Argus (L); Rockhill (F); Sundale (L); Pipersville (L); Point Pleasant (Me) (Fo–P).

Chrysosplenium americanum Schwein. GOLDEN SAXIFRAGE.

Wet shaded places, often in cold springs; locally abundant.

Finland (F); Quakertown (F); Doylestown (Me); New Britain (Sm); Aquetong (L); Southampton (L); Woodbourne (J); Yardley (L); Oxford Valley (L).

Parnassia caroliniana Michx. GRASS OF PARNASSUS.

Boggy meadows; rare.

Pleasant Valley (B, September 24, 1927).

Hydrangea aborescens L. WILD HYDRANGEA.

Rocky banks and cliffs chiefly along the Delaware River; locally abundant.

Nockamixon (F) (J) (Br); Erwinna (L); Pipersville (F); Point Pleasant (L); Lower Black Eddy (B); Center Bridge (B); New Hope (Sg); Yardley (L); (Brownsburg).

***Philadelphus coronarius** L. MOCK ORANGE.

Escaped from cultivation and established along steep bank, New Hope (B).

Ribes rotundifolium Michx. WILD GOOSEBERRY.

Rocky woods and banks, rare.

Nockamixon (F); Haycock Mountain (Mc, September 13, 1930); (B, May 3, 1931).

[**Ribes hirtellum** Michx.

(*R. oxycanthoides* of Gray's Manual, ed. 7.) Rhodora, xiii. 74 (1911). Reported from Narrowsville but no material was found.]

***Ribes Grossularia** L. EUROPEAN GOOSEBERRY.

(*R. Uva-crispi* L.)

Established along roadsides and fence rows; rare.

Sellersville (F); Buckingham (L).

Ribes americanum Mill. WILD BLACK CURRANT.

(*R. floridum* of Gray's Manual, ed. 7.) Rhodora, xi. 46 (1909).

Woods, thickets and banks, chiefly in alluvial soil; occasional.

Kintnersville (Bn); Narrowsville (Li) (F); Nockamixon (P); Ottsville (B); Quakertown (L); Rockhill (F); Point Pleasant (L); Forks of Neshaminy (Ma); Bensalem Township, $1\frac{3}{4}$ miles southwest of Hulmeville (B); (Sellersville).

***Ribes vulgare** Lam.

(*R. rubrum* of Fretz's Flora.)

Occasionally established as an escape.

Narrowsville (V); Lumberville (R. E. Shuh); Warrington (L); Langhorne (B).

It has been suggested by Dr. L. H. Bailey, Man. Cult. Pl., p. 335 (1924) that our American form of the common red currant should probably be called *R. sativum* Syme.

***Ribes odoratum** Wend. BUFFALO CURRANT.

(*R. aureum* of Gray's Manual, ed. 7.) Rhodora, xi. 47 (1909).

Found in cultivation and rarely established as an escape.

Finland (L, May 12, 1920); Solebury Township (Va–G).

HAMAMELIDACEAE (WITCH-HAZEL FAMILY)

Hamamelis virginiana L. WITCH-HAZEL.

Moist woods and thickets; frequent.

Upper Black Eddy (Fo); Revere (L); Shelly (F); Finland (L); Rockhhill (F) (K); Point Pleasant (L); Buckingham (L); New Hope (Sg).

Liquidambar Styraciflua L. SWEET GUM TREE.

Low rich soil of the Coastal Plain where it is frequent

Woodbourne (L); Roelofs (L); Morrisville (L); Fallsington (L); Bristol (F).

PLATANACEAE (PLANE TREE FAMILY)

Platanus occidentalis L. SYCAMORE. BUTTONWOOD.

Rich soil along streams and in moist woods; frequent.

Monroe (R–R); Ottsville (B); Sellersville (F); Telford (B); Grenoble (L); Bristol (St).

ROSACEAE (ROSE FAMILY)

Physocarpus opulifolius (L.) Maxim. NINE-BARK.

(*Opulaster opulifolius* (L.) Kuntze.)

Rocky ledges, débris at foot of cliffs and alluvial banks; frequent except on Coastal Plain where it is rare.

Nockamixon (H); Upper Black Eddy (T); Revere (L); Erwinna (Me); Rockhill (K) (M) (F); Perkasie (V); Pipersville (F); Lower Black Eddy (B); Warrington (L); Forks of Neshaminy (Bn); Brownsburg L; Andalusia (L).

***Spiraea japonica** L. f.

Established in thickets and along streams; rare.

Point Pleasant (F, June 11, 1898); Center Bridge (B).

Spiraea alba Du Roi. MEADOW-SWEET.

(*S. salicifolia* of Gray's Manual, ed. 7.) Rhodora, xxiii. 265, (1921).

Low, moist open ground; frequent in upper districts, occasional elsewhere.

Ottsville (L); Rockhill (B); Almont (L); Sellersville (F); Doylestown (Me); Yardley (Dr).

The Asiatic species, *S. salicifolia* L. was previously confused with *S. alba.* The Asiatic species has larger flowers which are purple, and narrower oblong leaves. It is sometimes found in cultivation but is not known as an escape in our area.

Spiraea latifolia Borkh. MEADOW-SWEET.

Situations similar to the preceding; frequent including the Coastal Plain.

Nockamixon (F); Upper Black Eddy (Bn); Quakertown (Mo); Doylestown (Me); Carversville (B); Lower Black Eddy (B); Yardley (B); Tullytown (M); Bristol (B) (Dr); Andalusia (B).

Spiraea tomentosa L. HARDHACK. STEEPLEBUSH.

Light moist soil chiefly along the Delaware River and on the Coastal Plain; locally abundant.

Narrowsville (P); Point Pleasant (F); Morrisville (Dr); Turkey Hill (B); Penn Valley (W); Tullytown (M) (Bn) (F); Bristol (D).

Gillenia trifoliata (L.) Moench. INDIAN PHYSIC.

(*Porterantherus trifoliatus* (L.) Britton.)

Dry open woods; occasional.

Argus (F); south-west of Sellersville (P); Lumberville (Me).

***Pyrus communis** L. PEAR.

Escaped from cultivation and established in thickets; occasional.

Argus (F, May 23, 1898).

***Pyrus prunifolia** Willd. CRAB APPLE.

Spontaneous in thicket, Sellersville (F, August 3, 1923).

Pyrus coronaria L. AMERICAN CRAB APPLE.

(*Malus fragrans* Rehder. *Malus coronaria* of Fretz's Flora).

Moist or dry open woods and thickets; occasional.

Quakertown (B) (Ma); Rockhill (F); Perkasie (F); Sellersville (F); Lahaska (L); Fallsington (L); Slickville (L).

***Pyrus Malus** L. APPLE.

(*Malus Malus* of Fretz's Flora.)

Frequent as an escape to woods, thickets, old pastures and banks.

Ottsville (B) (L); Rockhill (M); Rich Hill (F); Telford (B).

Pyrus arbutifolia (L.) L. f. CHOKEBERRY.

Low woods, thickets and swamps; frequent.

Nockamixon (C); Buckwampum Mountain (L); Haycock Mountain (Miss Coleman); Richland Township (F); Neshaminy (Me); Yardley (L); Tullytown (M); Bristol (Ma).

Pyrus arbutifolia (L.) L. f., var. **atropurpurea** (Britton) Robinson.

Similar situations; infrequent.

Yardley (L); Oxford Valley (L); Bristol (B).

Pyrus melanocarpa (Michx.) Willd. BLACK CHOKEBERRY.

Wet soil in woods and thickets; frequent.

Nockamixon (B); Sellersville (F); Doylestown (Me); Morrisville (L); Oxford Valley (L); Tullytown (L) (St); Bristol (F).

Amelanchier canadensis (L.) Medic. SHAD BUSH. SERVICE BERRY.

(*A. canadensis*, var. *Botryapium* of Gray's Manual, ed. 7.) Rhodora, xiv. 150 (1912).

Dryish soil of fence rows, thickets and slopes; frequent except on Coastal Plain.

Nockamixon (Pr); Pleasant Valley (B); Quakertown (B); Argus (F); Sellersville (F); Telford (B); Pipersville (L); Doylestown (Me); Neshaminy (Mc); Brownsburg (L).

Amelanchier laevis Wiegand.

(*A. canadensis* of Gray's Manual, ed. 7.) Rhodora, xiv. 154 (1912).

Dry to moist thickets; rare.

Thicket along top of cliff, Nockamixon (B, August 24, 1923).

Amelanchier oblongifolia (T. & G.) Roem.

(*A. oblongifolia* of Gray's Manual, ed. 7, in part.) Rhodora, xiv. 147 (1912).

A characteristic Coastal Plain species of low ground and swamps; locally abundant.

Point Pleasant (L); Woodbourne (J); Yardley (L); Morrisville (L); Penn Valley (C); Emilie (B); Bristol (F); Andalusia (Ma).

Amelanchier stolonifera Wiegand.

(*A. spicata* of Britton's Manual, p. 517 (1901) in part, and *A. oblongifolia* of Gray's Manual, ed. 7, in part.) Rhodora, xiv. 144 (1912).

Dry roadsides and sandy thickets, sometimes rather sterile soil; rare.

Naceville (J) (M) (F) (L); Point Pleasant (B); Yardley (L).

Crataegus Crus-galli L. Cockspur Thorn.

(Includes *C. Crus-galli oblongata* Sarg. and *C. rivalis* Sarg. of Fretz's Flora.)

Meadows, thickets and hedge rows in rather loose soil; frequent.

Durham Furnace (F); Quakertown (F); Finland (L); Sellersville (M) (F No. 24); Penns Manor (B); Penn Valley (C); Tullytown (F No. 33); Croydon (B).

Fretz's No. 24 is the type specimen of *C. rivalis* Sarg.

Crataegus Canbyi Sarg.

Stream banks and thickets in alluvial soil; rare.

Quakertown (F No. 120); Sellersville (M); Penn Valley (C&Bn); (Point Pleasant).

Crataegus cuneiformis (Marsh) Eggleston.

(*C. pausiaca* Ashe of Fretz's Flora.)

Meadows and thickets; rare.

Durham Furnace (F No. 147); Penn Valley (Bn).

Crataegus punctata Jacq.

(Includes *C. punctata canescens* Britton of Fretz's Flora.)

Damp soil of pastures, thickets and stream banks; occasional.

Durham Township (F No. 152 and 153); Perkasie (F); Sellersville (F) (M).

Crataegus succulenta Schrader.

(Includes *C. opica* Ashe, *C. radiosa* Sarg. and *C. micrantha* Sarg. of Fretz's Flora.)

Thickets and pasture lands; occasional in upper half of county.

Durham Station (F No. 154); Sellersville (F No. 19 and 20); Deep Run (F No. 197 and 198); Bedminster (F No. 209); (West Rockhill).

Crataegus Calpodendron (Ehrh.) Medic.

(*C. tomentosa* of Manuals, not L. Includes *C. structilis* Ashe.)

Thickets and meadows; infrequent.

Durham (R–R); Rockhill (M) (K); Sellersville (F No. 21 and 206); Derstine's Station (F No. 207).

Crataegus chrysocarpa Ashe.

(*C. Dodgeii* Ashe of Fretz's Flora.)

Meadows and thickets; rare.

California, near Quakertown (F No. 123).

There are two other sheets by Fretz, one labelled Sellersville and the other Bedminster, both bearing same date and both are No. 208. The correct locality has not been determined.

Crataegus straminea Beadle.

(Includes *C. abjecta* Sarg., *C. nemoralis* Sarg., *C. saxatilis* Sarg., *C. apposita* Sarg., *C. Schweinitziana* Sarg., *C. infera* Sarg. and *C. pygmaea* Sarg.)

Roadsides, rocky hillsides and pasture lands.

Durham Furnace (F No. 148; Nockamixon (M); Narrowsville (L); Ottsville (L); Rockhill Station (F No. 155); Perkasie

(F No. 157); Sellersville (F No. 119, 121, 161 and 162); East Rockhill Township (F 115); Hilltown Township (F No. 108); Bedminster (Kr); (Ridge Valley); (Hagersville); (Deep Run).

No. 108 is the type specimen of *C. abjecta* Sarg., No. 119 of *C. Schweinitziana* Sarg., No. 161 of *C. pygmaea* Sarg., and No. 162 of *C. infera* Sarg.

Crataegus roanensis Ashe.

(Includes *C. rufipes* Ashe.)

Thickets; rare and local.

Perkasie (F No. 169); South Perkasie (F No. 174); Sellersville (F No. 180).

No. 169 and No. 180 quoted above are in the Local Herbarium of the New York Botanical Garden and have been determined by W. W. Eggleston.

Crataegus macrosperma Ashe.

(Includes *C. tenella* Ashe., *C. lata* Sarg., *C. pumila* Sarg., *C. firma* Sarg., *C. saturata* Sarg., *C. longipetiolata* Sarg., and *C. Moyeriana* Sarg.)

Meadows, pastures and thickets; locally abundant.

Three Mile Run (F No. 101); Perkasie (F No. 130); Hilltown Township, near Sellersville [Pleasant Spring Bridge] (F No. 110, 111 and 128); Sellersville (F No. 105, 139, 140, 143 and 178); Telford (F No. 13).

No. 110 is the type specimen of *C. saturata* Sarg., No. 111 of *C. Moyeriana* Sarg., No. 128 of *C. firma* Sarg., No. 139 of *C. pumila* Sarg., No. 140 of *C. lata* Sarg., and No. 178 of *C. longipetiolata* Sarg.

Crataegus macrosperma Ashe, var. **demissa** (Sarg.) Eggleston.

(*C. condensa* Sarg.)

Similar situations; occasional.

Hilltown Township near Sellersville (F No. 173). This is the type specimen of *C. condensa.*

Crataegus macrosperma Ashe, var. **matura** (Sarg.) Eggleston.

(*C. Collinsiana* Sarg.)

Same habitats as typical species; occasional.

Sellersville (F No. 163). This is the type specimen of *C. Collinsiana.*

Crataegus populnea Ashe.

(*C. stolonifera* Sarg., and *C. modica* Sarg.)

Alluvial meadows and thickets; rare.

Pleasant Spring Bridge in Hilltown Township, variously quoted as near South Perkasie and near Sellersville (F No. 107), 109 and 144); (West Rockhill).

No. 109 is the type specimen of *C. modica* Sarg.

Crataegus rugosa Ashe.

(Includes *C. dissona* Sarg., *C. deltoides* Ashe, *C. alacris* Sarg., *C. delicata* Sarg., *C. scabriuscula* Sarg. and *C. Fretzii* Sarg.)

Roadsides, thickets and pastures.

Near Durham Station (F No. 151); East Rockhill Township, near Ridge Road (F No. 103); between South Perkasie and Sellersville (F No. 106); Sellersville, near Haar's Dam (F No. 177); Sellersville (F).

No. 103 is the type specimen for *C. deltoides* Ashe., No. 125 of *C. alacris* Sarg., No. 151 of *C. Fretzii* Sarg., and No. 177 of *C. delicata* Sarg., The Sellersville specimen with no number is the type specimen of *C. deducta* Sarg.

Crataegus pruinosa (Wendl.) Koch.

(Includes *C. arcana* Beadle., *C. austera* Sarg., *C. philadelphica* Sarg., *C. Ruthiana* Sarg. and *C. jejuna* Sarg.)

Open rocky woods and slopes; frequent in upper end.

Durham Furnace on limestone bluff (F No. 149); Shelly (B); California, near Quakertown (F No. 122); Rockhill Station (F No. 141); Three Mile Run (F); Perkasie (F No. 129 and 203); Sellersville (F No. 102, 136 and 201); Deep Run, Bedminster Township (F No. 126 and 181); (Rockhill); (Hilltown).

No. 136 is the type specimen of *C. jejuna* Sarg.

Crataegus Holmesiana Ashe.

(*C. villipes* Ashe and *C. Holmesiana,* var. *villipes* Ashe.)

Thicket on alluvial bank; rare.

Along East Branch of Perkiomen Creek at Sellersville (F No. 114 (Bn) (M).

Crataegus coccinea L.

(Includes *C. digna* Sarg. and *C. arcuata* Ashe.)

Upland thickets and pastures; infrequent.

Sellersville (Bn) (F No. 135 and 184); Hilltown Township (F No. 141); (West Rockhill).

Fretz's No. 135 labelled by him as *C. arcuata* Ashe forms the basis for the Bucks County record for *C. Pringlei* Sarg. in Taylor's Flora of New York and Vicinity, 390 (1915).

***Crataegus monogyna** Jacq. English Hawthorn.

(*C. oxyacantha* of Fretz's Flora.)

Escaped from cultivation; rare.

Tullytown (F, June, 1898).

Crataegus uniflora Muench.

(Includes *C. Smithii* Sarg. of Fretz's Flora.)

Chiefly in well drained, sandy soil; frequent.

Durham (R–R); Finland (B); Argus (F); Sellersville (F No. 22 and 182); Lumberville (L); Aquetong (K); Brownsburg (L); Tullytown (C).

[**Crataegus Phaenopyrum** (L. f.) Medic.

(*C cordata* (Mill.) Ait.)

Introduced as a hedge plant but nowhere established in the County although reported as frequent by Fretz.]

[**Cotoneaster Pyracantha** (L.) Spach.

There is a New Britain record in Fretz's Flora credited to A. S. Martin and a misidentified specimen in the herbarium of the Philadelphia Botanical Club, collected May, 1899, is so named on the original label and credited to A. S. Martin in Dr. C. D. Fretz's handwriting but the station is given as Doylestown. Mr. Martin, when asked about this, wrote that the plant was collected by him on Featherbed Hill, New Britain, and not at Doylestown, and was sent by him to Dr. Fretz.

The material was reidentified and is a flowering specimen of *Aronia,* probably *A. arbutifolia.* It is too young for a more definite identification.]

Fragaria virginiana Duchesne. STRAWBERRY.

Dry open slopes, fields and woods; common.

Buckwampum Mountain (L); Spinnerstown (L); Rockhill (M); Argus (F); Telford (B); Danboro (L); Gardenville (L); Neshaminy (Mc); Langhorne (B).

***Fragaria vesca** L. EUROPEAN WOOD STRAWBERRY.

Roadsides and waste places in loose soil; becoming frequent.

Buckwampum Mountain (L); Monroe (L); Kintnersville (L); Ottsville (L); Erwinna (L); Milford Square (L); Sellersville (L); Hilltown Township (B); Pipersville (F).

***Fragaria vesca** L., var. **alba** (Ehrh.) Rydb.

Similar situations; rare.

Telford (B, May 15, 1921); Tullytown (L, June 8, 1928).

Fragaria vesca L., var. **americana** Porter.

(*F. americana* (Porter) Britton.)

Open rocky woods and cliffs along the Delaware River; locally abundant.

Durham (F); Nockamixon (V) (P) (F); Upper Black Eddy (Bn).

***Duchesnea indica** (Andr.) Focke. INDIAN STRAWBERRY.

Naturalized in waste places; rare.

Durham Furnace (F); Andalusia (L); (Nockamixon).

Waldsteinia fragariodes (Michx.) Trattinick. BARREN STRAWBERRY.

Dry open woods and banks; infrequent.

Kintnersville (R–R); Ottsville (L); Erwinna (L); Quakertown (Ma); Sellersville (F); Plumstead Township (F).

Potentilla arguta Pursh.

(*Drymocallis arguta* of Fretz's Flora.)

Dry rocky banks or sandy or gravelly fields; rare.

Malta Island near New Hope (Ws); Bristol (C).

Potentilla norvegica L., var. **hirsuta** (Michx.) Lehm.

(*P. monspeliensis* of our Manuals). See Bibliot. Bot 16, Heft lxxi. 404 (1908).

Dry to moist soil in cultivated fields and waste places; common.

Nockamixon (Se); Ferndale (L); Ottsville (B); Quakertown (B); Steinsburg (Wi); Sellersville (F); Doylestown (B); Neshaminy (Mc); Tullytown (C); Bristol (Dr).

Potentilla argentea L. Silvery Cinquefoil.

Dry hillsides and sterile fields; rare.

Ferndale (E); Sellersville (F).

***Potentilla intermedia** L.

Naturalized in waste places; rare.

Bristol (L, August 8, 1927); (B, July 13, 1931).

***Potentilla recta** L.

(*P. sulphurea* Lam.)

Fields, roadsides and railroad banks; locally abundant and becoming more frequent.

Nockamixon (Fo); Upper Black Eddy (Tr–P); Springtown (F); Sellersville (F); Telford (Sm); Curley Hill, in Plumstead Township (B); Oxford Valley (B).

Potentilla pumila Poir.

Dry, somewhat sterile, open soil; frequent.

Durham (L); Quakertown (F); Sellersville (F); Telford (Sm); Aquetong (L); Tullytown (B); Bristol (L).

Potentilla canadensis L. Common Cinquefoil. Fine-finger.

Dry, often sandy or gravelly soil; common.

Buckwampum Mountain (L); Spinnerstown (B); Sellersville (F); Dublin (B); Doylestown (Me); Lahaska (L); Buckingham Valley (B); Neshaminy (Mc); Yardley (L); Fallsington (L); Tullytown (Dr).

Potentilla canadensis L., var. **simplex** (Michx.) T. & G.

Similar situations as the preceding but less common.

Sellersville (F); Rushland (L); Tullytown (W); Croydon (K).

***Filipendula rubra** (Hill) Robinson. QUEEN OF THE PRAIRIE.

(*Ulmaria rubra* Hill.)

Escaped from cultivation and established along roadsides; rare.

Steinsburg (F); Rich Hill (F).

Geum canadense Jacq. WHITE AVENS.

Shaded banks, thickets and open woods; common.

Monroe (R–R); Rockhill (F); Telford (B); Buckingham (L); Brownsburg (Co); Morrisville (L); Tullytown (L).

Geum flavum (Porter) Bicknell.

Dry woods and thickets; infrequent.

Monroe (R–R); Three Mile Run (F); Buckingham (L); Lumberville (L); Oxford Valley (B); (Solebury).

Geum virginianum L. ROUGH AVENS.

Open moist ground, borders of woods and fence rows; frequent.

Rockhill (W); Sellersville (F); Buckingham (L); Slickville (L); Oxford Valley (L); Andalusia (Bn) (Ma).

Geum strictum Ait. YELLOW AVENS.

Moist fields, meadows and thickets; frequent in upper end, rare on the Coastal Plain.

Narrowsville (E); Quakertown (C); Steinsburg (Wi); Weisel (B); Tullytown (M); (Andalusia).

Geum vernum (Raf.) T. & G.

Open woods and thickets; rare.

Springfield Township (Mo); Quakertown (C).

Rubus idaeus L., var. **strigosus** (Michx.) Maxim. RED RASPBERRY.

(*Rubus idaeus,* var. *aculeatissimus* of Gray's Manual, ed. 7.) Rhodora, xxi. 89 (1919).

(*Rubus strigosus* of Fretz's Flora.)

Sandy thickets; rare.

Nockamixon (P); Erwinna (L).

***Rubus phoenicolasius** Maxic. WINEBERRY.

Escaped from cultivation and frequently estabilshed.

Quakertown (F); Sellersville (F); Argus (F); Leidytown (F); Pipersville (F); Brownsburg (B); George School (B).

Rubus occidentalis L. BLACK RASPBERRY.

Fence rows, banks and thickets; common.

Buckwampum Mountain (L); Spinnerstown (L); Finland (L); Sellersville (F); Aquetong (K); Tullytown (B).

Rubus odoratus L. PURPLE FLOWERING RASPBERRY.

Gravelly and rocky banks and cliffs; frequent except on the Coastal Plain.

Narrowsville (J) (Bn); Upper Black Eddy (Bn); Rockhill (F) (M); Rocky Ridge (Wi); Argus (B); Pipersville (F); Point Pleasant (B); Center Bridge (B).

Rubus pubescens Raf. DWARF RASPBERRY.

(*R. triflorus* Richards. *R. americanus* of Fretz's Flora.) Rhodora, xi. 236 (1909).

Wet woods and thickets; a northern species found at several upper end stations.

Quakertown (P); Rockhill (F).

Rubus allegheniensis Porter. BLACKBERRY.

(*R. nigrobaccus* Bailey.)

Dry thickets, banks and clearings; frequent in upper end.

Applebachsville (B); Shelly (B); Milford Square (L); Perkasie (F).

Rubus frondosus Bigel.

Rocky hillsides, thickets and pastures; frequent.

Monroe (R–R); Buckwampum Mountain (L); Quakertown (F); Sellersville (F); Erwinna (L); Aquetong (K); Feasterville (B); Tullytown (B).

Rubus argustus Link.

Dry open woods and thickets; infrequent.

Rich Hill (F); Sellersville (F); Neshaminy (Mc).

[**Rubus Randii** (Bailey) Rydb.

Supposedly a hybrid with uncertain ancestry. It has been reported from the County by Porter but no material has been found.]

***Rubus laciniatus** Willd.

Sometimes cultivated and locally established; rare.

Point Pleasant (F); Bristol (L).

Rubus cuneifolius Pursh. SAND BLACKBERRY.

Sandy soil of the Coastal Plain; locally abundant.

Turkey Hill (L); Penn Valley (C); Tullytown (C); Bristol (B); (Bensalem).

[**Rubus setosus** Bigel.

(*R. nigricans* Rydb., in part.)

There is a Tullytown (F) record for this species based on a single collection of turions on May 30, 1899. The material proves to be an aberrant form of *R. frondosus*.]

Rubus tardatus Blanchard.

Wet open thicket near Oxford Valley (B, September 3, 1931).

Dr. L. H. Bailey determined this material. He declared that this specimen comes from outside the range of *R. tardatus* and it does not fit the diagnosis of Blanchard nor his specimens any too well but it is probably better to enlarge the conception of the species rather than to make it a new variety. See Gentes Herb. ii. 350 (1932).

Rubus hispidus L.

Wet soil in woods, thickets and meadows; frequent.

Shelly (F); Doylestown (Me); Yardley (L); Tullytown (M); Bristol (Dr).

Rubus flagellaris Willd. DEWBERRY.

(*R. procumbens* of Fretz's Flora. *R. villosus* of Gray's Manual, ed 7.). See Gentes Herb. i. 234 (1925).

Trailing over the ground in dry open places; frequent.

Monroe (R–R); Sellersville (F); Neshaminy (Mc); Woodburne (Bn); Tullytown (M); Penn Valley (F).

Rubus Baileyanus Britton.

(*R. villosus,* var. *humifusus* of Gray's Manual. ed. 7.)

Similar situations as preceding but less frequent.

New Hope (B); Tullytown (L); (Penn Valley. This record appears to be based on a very immature specimen, collected on May 30, 1899, which proves to be *R. flagellaris*).

[Dalibarda repens L.

A single specimen labelled "Bucks Co., Pa., 1880, Legit, Dr. I. S. Moyer" on an A. F. K. Krout label was found. No reference is made to this material in any previous list. The inference is that this material was sent to Krout by Dr. Moyer with other material and it was erroneously labelled "Bucks Co., Pa." by Krout.]

Agrimonia gryposepala Wallr. Agrimony.

(*A. hirsuta* Bicknell.)

Dry woods, thickets and banks; frequent except in lower end.

Nockamixon (J); Revere (W); Three Mile Run (F); Sellersville (F); Plumstead (F); Carversville (L); Doylestown (Me).

Agrimonia striata Michx.

A plant of thickets and banks reported from the County by Porter. The only material known is a Point Pleasant (L) specimen collected August 14, 1923.

Agrimonia mollis (T. & G.) Britton. Soft Agrimony.

Open woods, thickets, pastures and banks; frequent except in lower districts.

Ottsville (L); Argus (F); Sellersville (F); Point Pleasant (L); Doylestown (Me); Buckingham (L); Brownsburg (B) (L); Penns Park (L).

Agrimonia parviflora Ait.

Moist to dry woods and thickets; frequent.

Shelly (B); Rockhill (F); Almont (L); Sellersville (F); Neshaminy (M); Pineville (Fo); Yardley (Me); Morrisville (Fo); Penn Valley (C) (J); Bristol (L).

Agrimonia rostellata Wallr.

Dry rocky woods and alluvial banks; infrequent.

Passer (Wi); Argus (B); Point Pleasant (L).

Sanguisorba canadensis L. Canadian Burnet.

Boggy meadows; frequent.

Monroe (R–R); Springfield Township (Mo); Finland (L); Steinsburg (Wi); Tohickon Park (Wi); Pipersville (F); Carversville (L); Yardley (Va–G); Morrisville (L); Penns Manor (B); Penn Valley (C); Tullytown (J).

***Sanguisorba minor** Scop. Garden Burnet.

(*S. Sanguisorba* of Fretz's Flora.)

Escaped from cultivation; rare.

Rockhill (F, July 12, 1882).

[**Rosa setigera** Michx.

No material known from the County although listed from Bucks County by Porter.]

***Rosa blanda** Ait.

Found along a roadside in Hilltown Township, near Sellersville (F, June 10, 1899, and August 16, 1899). Probably an escape from an old homestead site, it has long since disappeared and is not known in the County at the present time.

***Rosa canina** L. Dog Rose.

Roadsides, pastures and old fields; frequent.

Nockamixon (Se); Uhlertown (Me); Ottsville (B); Sundale (B); Shelly (B); Finland (B); Spinnerstown (L); Argus (F); Sellersville (F); Point Pleasant (F).

***Rosa rubiginosa** L. Sweetbrier. Eglantine.

Thickets, pastures and waste places; infrequent.

Nockamixon (Se); Rockhill (B); Doylestown (Me); Fallsington (L).

***Rosa gallica** L.

Escaped from cultivation; occasional.

Rich Hill (L); Wormansville (L); Emilie (L).

Rosa carolina L. Dwarf Rose.

(*R. humilis* of authors.) Rhodora, xx. 91 (1918).

Dry slopes, roadsides and thickets; common.

Nockamixon (J); Uhlertown (Me); Richlandtown (L); Shelly (F); Rockhill (M); Argus (F); Sellersville (F); Doylestown (Me); Neshaminy (Mc); Bycot (K) (J); Richboro (L); Oxford Valley (L); Tullytown (L); Andalusia (L).

Rosa Lyoni Pursh.

(*R. humilis villosa* Best).

Similar situations as preceding. Distinguished from it by the decided pubescence on the under side of the leaves; infrequent.

Haycock Mountain (B, September 13, 1930); Buckmanville (L, June 27, 1926); (Point Pleasant).

Rosa palustris Marsh.

(*R. carolina* of authors.) Rhodora, xx. 91 (1918).

Low swampy places; common.

Brick Tavern (Ha); Finland (B); Sellersville (F); Doylestown (B); Bristol (Dr).

Rosa virginiana Mill.

(*R. lucida* Ehrh.)

Dry soil; infrequent.

Nockamixon (T); Doylestown (Me).

Prunus serotina Ehrh. WILD BLACK CHERRY.

Dry fencerows, woods and thickets; common.

Nockamixon (M); Bursonville (L); Killers Church (B); Sellersville (F) (J); Doylestown (Me); Neshaminy (Mc); Grenoble (L); Yardley (L); Roelofs (L); Tullytown (M).

Prunus virginiana L. CHOKE CHERRY.

Banks and thickets; common except on Coastal Plain.

Nockamixon P) (V&L); Narrowsville (Bn); Upper Black Eddy (Fo); Ottsville (L); Tohickon (L); Finland (L); Argus (W); Pipersville (L); Brownsburg (L); Fallsington (Dr).

***Prunus Padus** L. EUROPEAN BIRD CHERRY.

Introduced along moist wooded slope along Delaware River near Morrisville (L, May 30, 1924).

Resembles closely our *P. virginiana* but has larger and showier flowers on longer somewhat leafy racemes and flowers appear about a week later.

Prunus pennsylvanica L. f. FIRE CHERRY.

Margin of dry sandy woods, Furlong (F, May 8, 1924).

A northern species known only from this one station.

Prunus maritima Wang. BEACH PLUM.

Loose well drained soil; rare.

Hilltown Township, east of South Perkasie (F); Top Rock Road, 2.1 miles east of Ferndale (B).

Prunus depressa Pursh. SAND CHERRY.

(*P. pumila* of Fretz's Flora and of Gray's Manual, ed. 7, in part.) Rhodora, xxv. 71 (1923).

Islands and flats of Delaware River in treeless places where gravel and cobblestone drift is washed bare by floods; rare. Wyker's Island (R–R); Point Pleasant (L).

The real *P. pumila* is an upright, narrow leaved shrub of the Great Lake region, whereas *P. depressa* sends out strong prostrate branches, often quite thick, which form patches six feet or more in diameter.

***Prunus avium** L. SWEET CHERRY.

Established in woods and thickets; frequent.

Monroe (R–R); Rockhill (M); Sellersville (F); Pipersville (L); Neshaminy (Mc).

***Prunus Cerasus** L. SOUR CHERRY.

Escaped from cultivation to fence rows and thickets; frequent.

Kintnersville (L); Nockamixon (P); Hilltown (F); Dublin (L); New Hope (L); Tullytown (B).

***Prunus domestica** L. GARDEN PLUM.

Escaped from cultivation; rare.

Finland (L, May 12, 1920).

Prunus americana Marsh. WILD PLUM.

Fence rows, thickets and woods; frequent in upper end.

Monroe (R–R); Springtown (B); Finland (L); Quakertown (Bl–G); Sellersville (F); Pipersville (L).

***Prunus Persica** (L.) Stokes. PEACH.

(*Amygdalus Persica* L.)

Rarely escaping to roadsides and thickets.

Emilie (L, June 26, 1927).

LEGUMINOSAE (PULSE FAMILY)

***Gleditsia triacanthos** L. HONEY LOCUST.

Stream banks, woods and thickets; occasional.

Monroe (R–R); Pipersville (Kr); Point Pleasant (L); Morrisville (L); Tullytown (B); Bristol (B).

This species belongs in the Mississippi Basin and our specimens are probable all naturalized.

Cassia marilandica L. WILD SENNA.

Swamps and moist alluvial soil; frequent.

Monroe (R–R); Ottsville (L); Sellersville (F); Fountainville (Gr); Lower Black Eddy (B); Doylestown (Me); Hartsville (B); Yardley (Me); Bristol (L); Andalusia (L).

Cassia fasciculata Michx. PARTRIDGE PEA.

(*C. Chamaecrista* of authors.)

Open sandy and alluvial soil; frequent in lower districts.

Monroe (R–R); Castle Valley (Me); Morrisville (B); Tullytown (F); Newportville (L).

Cassia nictitans L. WILD SENSITIVE PLANT.

Dry open, usually sandy soil; common.

Monroe (R–R); Kellers's Church (B); Sellersville (F); Doylestown (Me); Lumberville (L); Buckingham (L); Bristol (L).

Cercis canadensis L. REDBUD. JUDAS TREE.

Rich soil in rocky woods; occurs only in a few localities but is abundant where it does occur.

Finland (L); Ridge Valley (F).

Baptisia tinctoria (L.) R. Br. WILD INDIGO.

Dry open woods, thickets and pastures; infrequent.

Monroe (R–R); East Rockhill Township (F); Doylestown (Me); Carversville (L); Andalusia (L).

Crotalaria sagittalis L. Rattle-box.

Dry open places, preferably in light soil; frequent.

Durham (R–R); Upper Black Eddy (Tr–P); Bedminster (F); Soliday's Island (F); Richboro (L); Woodbourne (L); Tullytown (Dr); Bristol (L); (Holicong); (Upper Makefield).

[**Cytisus scoparius** (L.) Link.

In the County according to Porter but no specimens found.]

Lupinus perennis L. Wild Lupine.

Dry sandy soil; rare.

Kintnersville (R–R); Wyker's Island (R–R); Doylestown (Me); Penn Valley (C); (Bedminster).

***Trifolium arvense** L. Rabbit-foot Clover.

Fields and waste places; common.

Monroe (R–R); Buckwampum Mountain (L); Springtown (B); Pleasant Valley (B); Sellersville (F); Telford (B); Pipersville (F); Doylestown (Me); Washington's Crossing (B); Tullytown (B).

***Trifolium incarnatum** L. Crimson Clover.

Rarely established temporarily in fields and waste places.

Telford (Sm); Penn Valley (F); (Hilltown).

***Trifolium pratense** L. Red Clover.

Fields, meadows and roadsides; common.

Monroe (R–R); Quakertown (L); Telford (B); Blooming Glen (L); Neshaminy (Mc); Washington's Crossing (Me).

***Trifolium repens** L. White Clover.

Fields and waste places; common.

Monroe (R–R); Sundale (L); Sellersville (F); Doylestown (Me); Neshaminy (Mc); Tullytown (L).

***Trifolium hybridum** L. Alsike Clover.

In fields, meadows and waste places; common.

Revere (R–R); Quakertown (B); Rockhill (L); Telford (Sm); Blooming Glen (L); Neshaminy (Mc); Tullytown (B).

***Trifolium agrarium** L. Yellow Clover. Hop Clover.

(*T. aureum* of authors.)

Fields, roadsides and waste places; common.

Buckwampum Mountain (L); Uhlertown (Me); Sundale (L); Richlandtown (L); Rocky Ridge (L); Telford (B); Dublin (L); Doylestown (Me); Edison (L); Neshaminy (Mc); Bristol (Dr).

***Trifolium procumbens** L. Low Hop Clover.

Fields and roadsides; not frequent.

Monroe (R–R); Springtown (B); Telford (Sm); Doylestown (Me).

***Trifolium dubium** Sibth.

Fields and waste places; rare.

Turkey Hill (B); Penn Valley (F); (Tullytown).

***Melilotus officinalis** (L.) Lam. Yellow Sweet Clover.

A weed of fields, roadsides and waste ground; frequent.

Richlandtown (B); Argus (F); Sellersville (F); Point Pleasant (R–R); Neshaminy (Mc); Bristol (Dr); (Quakertown); (New Hope).

***Melilotus alba** Desr. White Sweet Clover.

Similar situations as preceding; frequent.

Buckwampum Mountain (L); Richlandtown (L); Shelly (B); Argus (F); Sellersville (F); Telford (B); Point Pleasant (L); Doylestown (Me); Neshaminy (Mc); (Durham Furnace); (New Hope); (Langhorne).

***Medicago sativa** L. Alfalfa.

Established in fields and along roadsides; frequent.

Riegelsville (R–R); West Rockhill Township (F); Doylestown (F)(Me); Bristol (C).

***Medicago lupulina** L. Black Medick.

Fields and waste places as a weed; common.

Monroe (B); Ottsville (L); Shelly (B); Sellersville (F); Doylestown (Me); Feasterville (B).

[**Medicago arabica** Huds.

Reported from Andalusia (Ma) but no specimens found.]

[**Medicago hispida** Gaertn.

(*M. denticulata* Willd.)

In the County according to Porter but no specimens seen.]

***Lotus corniculatus** L.

Established on lawn, Telford (Sm, August 20, 1917).

***Amorpha fruticosa** L. False Indigo.

Established as a roadside escape, Richlandtown (L, June 26, 1927).

Tephrosia virginiana (L.) Pers. Goat's Rue. Catgut.

(*Cracca virginiana* L.)

Dry sandy soil; infrequent.

Nockamixon (F); Point Pleasant (B); Buckingham (L); Andalusia (Ma).

***Robinia Pseudo-Acacia** L. Black Locust.

Established in fence rows and along banks; locally abundant.

Monroe (R–R); Sellersville (F); Ottsville (L); Point Pleasant (L); Morrisville (Dr).

***Robinia viscosa** Vent. Clammy Locust.

Rarely escaped from cultivation.

Escaped, Revere (L); spontaneous, Quakertown (Mo).

Desmondium nudiflorum (L.) DC.

Dry open woods; frequent.

Monroe (R–R); Ottsville (L); Pleasant Valley (B); Argus (B); Sellersville (F); Buckingham (B); Brownsburg (L); Turkey Hill (B); Penns Park (L); Feasterville (B).

Desmodium grandiflorum (Walt.) DC.

Dry open, often rocky, woods; frequent except on Coastal Plain.

Monroe (Dr); Haycock Mountain (B); Weisel (B); Rich Hill (L); Sellersville (F); Erwinna (L); Brownsburg (L); Penns Park (L).

Desmodium rotundifolium (Michx.) DC.

(*Meibomia Michauxii* Vail.)

Dry open places, borders of woods and thickets; occasional.

Durham (R–R); Haycock Mountain (Tr–P); Finland (B); Tinicum Township (F); Plumsteadville (F); Doylestown (Me).

Desmodium glabellum (Michx.) DC.

Dry usually sandy soil; rare.

Near Durham (R–R, September 12, 1888, and September, 1890).

In the manuscript notes kept by the Ruth Brothers they state that this plant was found at the Indian jasper mine near Rattlesnake Hill.

The above speciments have been critically examined and show all the characters of typical *D. glabellum* except the loments which appear to be somewhat abnormal.

Desmodium canescens (L.) DC. Hoary Tick Trefoil.

Rich sandy loam along the Delaware River; infrequent.

Monroe (R–R); Point Pleasant (F); Morrisville (B); Andalusia (Ma) (L).

Desmodium bracteosum (Michx.) DC.

Dry woods and thickets; rare.

Rattlesnake Hill, Durham Township (R–R); Rockhill (F, August, 1881).

Desmodium laevigatum (Nutt.) DC. Smooth Tick-trefoil.

Dry woods; rare.

Finland (L); Buckingham Mountain (J. K. Leatherman); Glen Lake (L).

Desmodium viridiflorum (L.) Beck.

Dry woods; rare.

Buckingham (L, July 23, 1917).

Desmodium Dillenii Darl.

Woods, thickets and open places; frequent.

Monroe (Dr); Haycock Run (B); Finland (L); Rockhill (F); Sellersville (B); Lumberville (B); Doylestown (Me); Center Bridge (Fi); Yardley (Dr); Eddington (B).

Desmodium paniculatum (L.) DC.

Dry open places; occasional.

Nockamixon (Tr–P); Finland (L); Rockhill (F); Sellersville (B); Doylestown (Me); Yardley (Fo–P); Emilie (B).

Desmodium canadense (L.) DC. Showy Tick-trefoil.

Thickets and stream banks; frequent.

Nockamixon (C)(F); Narrowsville (L); Rocky Ridge (L); Sellersville (B); Pipersville (F); Point Pleasant (L); Morrisville (L); Bristol (Dr).

Desmodium rigidum (Ell.) DC.

Dry open woods; rare.

Turkey Hill (B, August 24, 1920); (Sellersville).

Desmodium obtusum (Muhl.) DC.

Dry open sandy woods and thickets; not frequent.

Upper Black Eddy (Tr–P); Rockhill (F); Lumberville (B).

Desmodium marilandicum (L.) DC.

Fields, thickets and open woods; infrequent.

Nockamixon (R–R); Ottsville (L); Finland (B); Sellersville (F); Doylestown (Me); Furlong (L).

Lespedeza procumbens Michx. Trailing Bush Clover.

Dry usually sandy soil; occasional.

Passer (Wi); Rockhill (F); Aquetong (L); Turkey Hill (B).

Lespedeza repens (L.) Bart.

Dry sandy soil; occasional.

Durham (R–R); (F); Furlong (B); Turkey Hill (B); Edgely (L).

Lespedeza violacea (L.) Pers. Bush Clover.

Dry open woods and thickets; infrequent.

Monroe (R–R); Pleasant Valley (B); Rocky Valley near Passer (B); Brownsburg (L).

Lespedeza virginica (L.) Britton.

Dry open woods, thickets and banks; frequent.

Monroe (R–R); Rockhill (F); Perkasie (B); Sellersville (F); Pipersville (F); Brownsburg (L); Bristol (F)(C).

Lespedeza intermedia (Wats.) Britton.

(*L. frutescens* of Gray's Manual, ed. 7.) Rhodora, xxvi. 29 (1924).

Dry open woods; frequent.

Narrowsville (Bn); Haycock Mountain (B); Rockhill (F); Doylestown (Me); Neshaminy (Mc); Turkey Hill (B); Emilie (B); Bristol (F).

Lespedeza hirta (L.) Hornem.

Loose dry soil; frequent.

Nockamixon (F)(Bn); Pleasant Valley (B); Doylestown (Me).

Lespedeza capitata Michx.

Dry fields and banks; frequent.

Monroe (R–R); Upper Black Eddy (Tr–P); Keller's Church (B); Perkasie (B); Point Pleasant (L); Tullytown (C); Bristol (F).

Lespedeza angustifolia (Pursh) Ell.

Dry sandy soil of the Coastal Plain; rare and local.

A single sheet bearing the localities Penn Valley and Tullytown on same label (C, September 12, 1894).

Stylosanthes biflora (L.) BSP. Pencil Flower.

Dry, usually sandy soil; rare.

Monroe (R–R); Point Pleasant (F, August, 1881); (Bristol).

[**Vicia sativa** L.

Reported from Durham (R) but material proves to be *V. angustifolia* var. *segetalis*.]

***Vicia angustifolia** Reichard, var. **segetalis** (Thuill.) Koch.

Canal near Durham Lock (R–R, October 29, 1887); naturalized as a weed along railroad near Doylestown (B, June 12, 1921).

***Vicia tetrasperma** (L.) Moench.

Fields, roadsides and waste places; sparingly introduced.

Almont (B, July 23, 1923); Dark Hollow, near New Hope (J. H. Butterfoss–R, June 1, 1889).

***Vicia Cracca** L. Cow Vetch.

Established in dry soil; frequent.

Sellersville (F); Doylestown (Me); Bristol (Dr); (Plumstead); (Lahaska); (New Hope); (Wrightstown).

Vicia caroliniana Walt.

Banks, cliffs and fields; rare.

Springfield Township (F, May 3, 1902); (Durham); (Point Pleasant).

Vicia americana Muhl.

Moist ground; rare.

Monroe (R–R); Point Pleasant (F, June 15, 1885); (Erwinna).

***Vicia villosa** Roth. Hairy Vetch. Winter Vetch.

Used as a cover crop and occasionally persistent for some years where it was sown, or sometimes established along roadsides and in waste places.

Perkasie (F); Doylestown (B); Penn Valley (F)(Wi).

[Lathyrus palustris L.

No material found to verify the Bristol (Ma) record.]

Lathyrus palustris L., var. **myrtifolius** (Muhl.) Gray.

(*L. myrtifolius* Muhl.)

Moist shores and banks; rare.

Tullytown (Dr, August 7, 1925). There are also two sheets with C. D. Fretz labels and labelled "Bucks Co., Pa." One is dated June, 1866, and the other July, 1867. It is possible that one of these is the basis for the Bristol (Ma) record although the labels do not indicate that Martindale was the collector.

[Lathyrus venosus Muhl.

Reported from New Hope by E. Newlin Williams but no material has been found.]

Apios tuberosa Moench. Ground Nut.

(*A. Apios* McM.)

Low rich thickets; common.

Buckwampum Mountain (R–R) ; Doylestown (Me) ; Penn Valley (J) ; Bristol (F) ; Oxford Valley (L).

Phaseolus polystachyus (L.) BSP. WILD BEAN.

In thickets; rare and local.

Nockamixon (F) ; Solebury (E. Newlin Williams).

Strophostyles helvola (L.) Britton.

Sandy soil in lower end; locally abundant.

Tullytown (F) ; Bristol (F) ; Andalusia (Ma) ; (Penn Valley).

Strophostyles umbellata (Muhl.) Britton.

Sandy soil of the Coastal Plain; locally abundant.

Turkey Hill (B) ; Tullytown (F) ; Bristol (F) ; (Langhorne) ; (Penn Valley).

Amphicarpa monoica (L.) Ell. HOG PEANUT.

(*Falcata comosa* of authors.)

Moist woods and thickets; frequent.

Monroe (R–R) ; Haycock Mountain (B) ; Argus (L) ; Ridge Valley (F) ; Telford (B) ; Doylestown (Me) ; Grenoble (L) ; Turkey Hill (B).

Amphicarpa Pitcheri T. & G.

(*Falcata Pitcheri* (T. & G.) Kuntze).

Moist thickets and borders of marshes; much less frequent than preceding.

Monroe (Dr) ; Lumberville (L) ; Neshaminy (Me) ; Tullytown (L).

LINACEAE (FLAX FAMILY)

***Linum usitatissimum** L. COMMON FLAX.

A weedy escape along railroads and roadsides; occasional.

Sellersville (F) ; Doylestown (Me).

***Linum sulcatum** Riddell.

Reported in Keller & Brown's Flora of Philadelphia and Vicinity, 208 (1905) by Benjamin H. Smith as occurring at Bristol. Mr. Smith in a letter to Dr. C. D. Fretz, dated May 24, 1904, states that "*L. sulcatum* as reported from Bristol by me, was

erroneous, as I never collected plants in that locality, but I have collected the plant in Tinicum, Delaware County.'' This species is therefore excluded.]

Linum striatum Walt. YELLOW FLAX.

Moist open ground; occasional.

Upper Black Eddy (Tr–P); Rockhill (F); Ridge Valley (F); Dublin (Dr); Turkey Hill (B); Tullytown (F); Bristol (B); (Durham); (Penn Valley).

Linum virginianum L. YELLOW FLAX.

Dry fields and banks or in shaded situations; frequent.

Monroe (R–R); Revere (W); Springtown (L); Shelly (B); Finland (L); Rocky Ridge (B); Dublin (Dr); Doylestown (Me); Buckingham (K).

Linum medium (Planch.) Britton.

Dry to somewhat damp soil; rare.

Keller's Church (B); Three Mile Run (F); Roelofs (L).

Linum floridanum (Planch.) Trel.

Open woods and fields; rare.

Keller's Church (B); Roelofs (L).

OXALIDACEAE (WOOD SORREL FAMILY)

Oxalis violacea L. VIOLET WOOD SORREL.

Open woods, thickets and hillsides; frequent.

Monroe (R–R); Ottsville (B)(L); Finland (L); Sellersville (F); Telford (B); Doylestown (Me); Aquetong (Wi); Roelofs (L); Hulmeville (B).

Oxalis stricta L. YELLOW WOOD SORREL.

Gravelly or stony fields and waste places; frequent.

Sellersville (F); Hilltown (F); Morrisville (L); Tullytown (B); Bristol (L).

Oxalis florida Salisb. YELLOW WOOD SORREL.

(*O. filipes* of Gray's Manual ed. 7, not Small, and *O. Brittonae* Small). Rhodora, xxvii. 133 (1925).

Dry sandy or gravelly soil; common.

Buckwampum Mountain (L); Ottsville (L); Sellersville (F); Doylestown (Dr); Aquetong (K); Feasterville (B); Yardley (L); Morrisville (Dr); Bristol (L).

Oxalis europaea Jord. YELLOW WOOD SORREL.

(*O. corniculata* of Gray's Manual, ed. 7, not L., and *O. rufa* of Fretz's Flora.) Rhodora, xxvii. 135 (1925).

Abandoned fields, woods and thickets; frequent.

Kintnersville (Dr); Applebachsville (L); Sellersville (F); Plumsteadville (Dr); Doylestown (Me)(B); Lumberville (L); Emilie (B).

Some of this material can be referred to forma *cymosa* with spreading hairs on the pedicels. (*O. cymosa* Small). In the typical form the hairs are appressed.

[**Oxalis corniculata** L. CREEPING YELLOW WOOD SORREL.

(*O. repens* of Gray's Manual, ed. 7.)

This plant is especially prevalent on ballast and in and about greenhouses. Reported from Durham Furnace but no material was found.]

GERANIACEAE (GERANIUM FAMILY)

Geranium maculatum L. WILD CRANESBILL.

Banks, thickets and borders of woods; common.

Monroe (R–R); Spinnerstown (B); Finland (F); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc); Lahaska (L).

Geranium Robertianum L. HERB ROBERT.

Shaded rocky woods and cliffs; locally abundant.

Riegelsville (Bn); Durham Furnace (F); Monroe (L); Nockamixon (J)(P)(M); Narrowsville (Bn); Uhlertown (Me); Erwinna (B. Walton); Rockhill (F); (Argus); (Point Pleasant).

Geranium carolinianum L.

Dry often sterile soil; frequent.

Durham (F); Upper Black Eddy (Pr); Morrisville (L); Tullytown (F); Churchville (B); Croydon (K).

***Geranium pusillum** Burm. f.

Persistent on lawn, Telford (B, August 3, 1912).

***Geranium molle** L.

Waste ground, Sellersville (F, June 22, 1899).

***Geranium columbinum** L.

Dry roadside bank near Beaver Creek, Tinicum Township, east of Ottsville (B, May 30, 1923).

***Geranium striatum** L.

An introduced species growing abundantly in the George School woods near a rubbish heap. It has been known to grow there for a number of years and was called to the writer's attention in 1931 by Miss Annie C. Scarborough. Herbarium specimens were collected on June 29, 1932 (B).

A native of Italy and the Balkan region, the species has become established in various parts of Europe. How it was introduced at George School is not known.

***Erodium cicutarium** (L.) L'Her. Storksbill.

Established as a weed, Newtown (Warren P. Adams, May 11, 1916).

RUTACEAE (rue family)

Zanthoxylum americanum Mill. Prickly Ash.

Rocky woods, thickets and banks; frequent in upper end.

Nockamixon Swamp (Bn); Revere (L); Quakertown (B); Ottsville (L); Trumbauersville (L); Finland (B); Argus (F)(K)(Bn).

Ptelea trifoliata L. Hop Tree.

Alluvial soil; rare.

Stover's & Ridge Island (Mo); Morrisville (L).

SIMARUBACEAE (quassia family)

***Ailanthus altissima** (Mill.) Swingle. Tree of Heaven.

(*A. glandulosa* Desf.) Journ. Wash. Acad. Sci. vi. 490 (1916).

The species is probably established in a number of localities but material is scarce in herbaria.

Ottsville (B, September 19, 1931); (Buckingham Mountain).

POLYGALACEAE (MILKWORT FAMILY)

Polygala paucifolia Willd. FLOWERING WINTERGREEN.

Dry woods and shaded banks; rare.

Near Quakertown (F, June 1876).

Polygala Senega L. SENECA SNAKEROOT.

Damp meadows; few stations in County but very abundant at these stations.

Near Quakertown (Bn); Springfield Township, near Pleasant Valley (T)(F); (Bristol).

Polygala sanguinea L. PURPLE MILKWORT.

(*P. viridescens* L.)

Fields and meadows; common.

Revere (B); Quakertown (Bn); Steinsburg (Wi); Kellersville (B); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc); Buckingham (J); Yardley (Me); Morrisville (Dr); Roelofs (L); Penn Valley (C)(J); Tullytown (C)(Bn); Bristol (F).

Polygala Nuttallii T. & G.

Dry sandy soil of the Coastal Plain; rare and local.

Penn Valley (C); Tullytown (C)(F); Bristol (B)(Ma).

Polygala cruciata L. CROSS-LEAVED MILKWORT.

Low sandy soil of the Coastal Plain; rare.

Yardley (B); Bristol (F).

Polygala verticillata L.

Dry or moist fields, slopes and open woods; common.

Buckwampum Mountain (L); Rockhill (Bi); Sellersville (F); Stump Road, Plumstead Township (L).

Polygala Pretzii Pennell.

A segregate of *P. verticillata* L. Bartonia xiii. 12 (1931).

Meadows and sandy slopes; frequent.

Pleasant Valley (B); Passer (Wi); Quakertown (B); Argus (K); Ottsville (L); Lumberville (L); Bristol (Dr).

This species differs from *P. verticillata* by its hirsute seed, the longer capsule (1.5 mm. long) and the racemes are on peduncles 2–7 cm. long.

Polygala ambigua Nutt.

(*P. verticillata,* var. *ambigua* of Gray's Manual, ed. 7.)

Fields, woods and slopes; frequent.

Monroe (R–R); Ottsville (B); Rockhill (F); Bristol (Ma).

[Polygala lutea L. ORANGE MILKWORT.

Reported from near Bristol (Ma) but no material has been found to verify this record.]

EUPHORBIACEAE (SPURGE FAMILY)

Crotonopsis elliptica Willd.

(*C. linearis* of Fretz's Flora.) Bul. Torr. Bot. Club, xlv. 477 (1918).

Dry sandy soil; rare.

1½ miles S.W. of Bristol (D, August 19, 1866).

Real *C. linearis* is a southern species; it has rather long slender fruiting spikes with three to six fruits without evident vein on each side, whereas *C. elliptica* has a shorter fruiting spike with but one or two fruits, each fruit with an evident median vein on each side.

Acalypha virginia L. THREE-SEEDED MERCURY.

Weed of woods, thickets, roadsides and waste places; common.

Monroe (R–R); Shelly (B); Lumberville (B); Doylestown (Me); Neshaminy (Mc); Jamison (Dr); Wrightstown (B); Emilie (B); Bristol (B).

Acalypha gracilens Gray.

Dry woods and thickets; occasional.

Plumstead (Mo); Mechanicsville (B); New Hope (Fi); Morrisville (L); Fallsington (L).

Acalypha digyneia Raf.

Rhodora, xxix. 198 (1927).

Dry open ground; frequent.

Monroe (R–R); Upper Black Eddy (Tr–P); Telford (B); Lumberville (L); Emilie (B); Feasterville (B).

Formerly confused with *A. virginica* from which it is distinguished by its narrower leaves, by the spreading pubescence of

the stem, and by the more numerously lobed (11–15) more or less hispid fruiting bracts.

Acalypha ostryaefolia Riddell.

A southern species usually found in thickets and waste places is reported from Morrisville in Fretz's Flora by a Mr. Lanning. The only material discovered is a specimen with a Thos. C. Porter label, and is labelled in Porter's handwriting, "Bucks Co., Penna. Legit Lanning." There is no date. This is most likely the basis for the record in Fretz's Flora.

Euphorbia nutans Lag.

(*E. Preslii* of Manuals.)

A weed in fields, thickets and waste places; common.

Monroe (R–R); Sellersville (F); Ottsville (L); Point Pleasant (B); Doylestown (Me); Neshaminy (Mc); Washington's Crossing (Me); Hulmeville (B).

Euphorbia hirsuta (Torr.) Wiegand.

Similar situations as the preceding; common.

Nockamixon (F); Haycock Run (B); Point Pleasant (L); Brownsburg (L); Tullytown (F); (Hilltown).

Euphorbia maculata L. Milk Purslane.

Similar situations; common.

Upper Black Eddy (Tr–P); Sellersville (F); Solliday's Island (F); Doylestown (Me); Washington's Crossing (Me); Grenoble (L); Yardley (L); Morrisville (Fo–P); Bristol (Dr).

***Euphorbia marginata** Pursh. Snow-on-the-Mountain.

Waste ground; rare as an escape.

Monroe (R–R); South Perkasie (F); Sellersville (F); Bristol (B).

Euphorbia corollata L. Flowering Spurge.

Dry sandy soil along the Delaware River; rare.

Monroe (R–R, August, 1885); Kintnersville (R–R, August, 1889); Point Pleasant (B, July 31, 1923).

Euphorbia Ipecacuanhae L.

Dry sandy soil, Turkey Hill, near Penn Valley (C, June 8, 1894, and July 19, 1908).

***Euphorbia Helioscopia** L.

Waste ground, Bristol (F, May 30, 1913).

***Euphorbia Cyparissias** L. CYPRESS SPURGE.

Escaped from cultivation; occasional.

Sellersville (F); Telford (B); Bristol (B).

***Euphorbia Lathyrus** L. MOLE SPURGE.

A rare escape.

Narrowsville (L); Rockhill Station (Bl–G); Sellersville (F).

CALLITRICHACEAE (WATER STARWORT FAMILY)

Callitriche Austini Engelm.

(*C. deflexa,* var. *Austini* of Gray's Manual, ed. 7.)

Damp soil, frequent.

Spinnerstown (L); Quakertown (E); Sellersville (F); Point Pleasant (L); Glen Lake (V); New Hope (B); Oxford Valley (L).

Callitriche palustris L. WATER STARWORT.

Quiet waters of ditches and pools; frequent.

Monroe (R–R); Uhlertown (Me); Washington's Crossing (Me); Glen Lake (V); Yardley (L); Fallsington (L); Croydon (Dr).

Callitriche heterophylla Pursh.

Ditches, pools and muddy places; frequent.

Richlandtown (Me); Quakertown (L); Finland (L); Sellersville (F); Point Pleasant (L); Turkey Hill (L); Andalusia (L).

***Callitriche stagnalis** Scop.

Ditches, pools and streams; frequent.

Rockhill (M)(K); Doylestown (B); Oxford Valley (Grace Tees); Emilie (Dr).

An Old World species formerly confused with *C. heterophylla* but differing from it by its coarser growth, larger fruit (1.7 mm.

high) which is green and has a transparent wing on outer margin. In *C. heterophylla* the fruit is 1 mm. high, brown and without a wing. Rhodora, xxxiv. 37 (1932).

[Callitriche autumnalis L.

(*C. bifida* Morong.)

A northern species reported from Rockhill Township, near Sellersville but no specimens found.]

LIMNANTHACEAE (FALSE MERMAID FAMILY)

Floerkea proserpinacoides Willd. FALSE MERMAID.

Quiet shallow waters, damp alluvial woods and thickets; locally very abundant.

Pleasant Valley (B); Sellersville (F); Bedminster (L); Doylestown (Me); Edison (Fo–P); Penn's Park (L), Morrisville (L); Janney (L); (Bensalem).

ANACARDIACEAE (CASHEW FAMILY)

Rhus typhina L. STAGHORN SUMAC.

(*R. hirta* Sudworth.)

Dry banks, clearings and fence rows; frequent.

Narrowsville (L); Buckwampum Mountain (L); Ottsville (B); Doylestown (Me); Neshaminy (Mc); Bycot (J); Buckmanville (L); Langhorne (B); Turkey Hill (L); Tullytown (L).

Rhus glabra L. SMOOTH SUMAC.

Dry soil; common.

Durham (R–R); Ottsville (L); Rich Hill (F); Sellersville (F); Doylestown (Me); Neshaminy (Mc).

Rhus copallina L. DWARF SUMAC.

Dry banks and thickets; infrequent.

Bursonville (R–R); two miles west of Sellersville, in West Rockhill Township (F); Doylestown (Me); Brownsburg (L).

Rhus Vernix L. POISON SUMAC.

Swamps and wet thickets; locally abundant.

Strawntown (Bl–G); Finland (L); Rockhill (F); Doylestown (Me); swamp, Buckingham (F); Yardley (Fo); Tullytown (M); Bristol (L).

Rhus Toxicodendron L. Poison Ivy.

(*R. radicans* of Fretz's Flora.)

Banks, roadsides, fence rows and woods; common.

Monroe (R–R); Uhlertown (Me); Milford Square (L); Sellersville (F); Pipersville (L); Doylestown (Me); Neshaminy (L); Grenoble (L); Tullytown (L); Hulmeville (B).

Very variable as to habit, habitat, leaf-shape, pubescence and dentation of leaf, and fruit but the differences do not appear to be constant.

AQUIFOLIACEAE (holly family)

Ilex opaca Ait. American Holly.

Moist woods and thickets; rare.

Yardley (L); Bristol (B); (Attleborough).

Ilex verticillata (L.) Gray. Winterberry. Black Alder.

Low woods and thickets; frequent.

Nockamixon (M); Ottsville (B); Rockhill (Br); Argus (B); Sellersville (F); Doylestown (Me); Neshaminy (Mc); Yardley (L); Emilie (Dr); Tullytown (C); Bristol (B)(St).

Ilex verticillata (L.) Gray, var. **padifolia** (Willd.) T. & G.

A specimen in the Herbarium of J. A. & H. F. Ruth forms the basis for the Buckwampum Mountain record of *I. verticillata cyclophylla* Robinson of Fretz's Flora. The material proves to be var. *padifolia.*

Ilex laevigata (Pursh) Gray. Smooth Winterberry.

Swamps, wet woods and thickets of the Coastal Plain; not frequent.

Yardley (L); Tullytown (B); (Bristol).

Ilex glabra (L.) Gray. Inkberry.

Low sandy ground; rare.

Bristol (Ma, July 1866).

CELASTRACEAE (staff tree family)

***Evonymus atropurpureus** Jacq. Burning Bush. Waahoo.

Woods and thickets; rare.

Durham (R–R); Ottsville (L); Trumbauersville (L); Rockhill (F); Buckingham (L).

A plant of the Mississippi Basin common in cultivation and represented in the County only as an escape.

***Evonymus europaeus** L. European Spindle Tree.

Naturalized in open woods and along roadsides; rare.

Bristol (F); Croydon (K); (Tullytown).

Evonymus americanus L. Strawberry Bush.

Low woods and thickets; rare.

Langhorne (B); Roelofs (L); Yardley (B); Bristol (B)(F); Andalusia (L); (Bensalem).

[Evonymus obovatus Nutt.

Reported from Langhorne's Hill (Ma) but no material seen.]

Celastrus scandens L. Climbing Bitter-sweet.

Fence rows, thickets and stream banks; common.

Nockamixon (M); Bursonville (L); Richlandtown (B); Milford Square (B); Finland (L); Trumbauersville (L); Perkasie (F); Argus (L); New Britain Township (Gr); Danboro (L); Lumberville (L); Doylestown (Me); Solebury Meeting House (Miss E. Mullen); Jericho Hill (L); Center Bridge (L).

STAPHYLEACEAE (bladder nut family)

Staphylea trifolia L. American Bladder Nut.

Fence rows, thickets and moist banks; frequent.

Nockamixon (M); Uhlertown (Me); Ottsville (L); Rockhill (W); Sellersville (F); Curley Hill (B); Point Pleasant (Me); New Hope (Sg); Rushland (L).

ACERACEAE (maple family)

Acer pennsylvanicum L. Striped Maple.

Wooded cliffs along the Delaware River; rare.

Lumberville (Fi); Center Bridge (Fi).

Acer spicatum Lam. Mountain Maple.

Damp rocky woods and thickets; rare.

Nockamixon (M)(H)(Br)(C); Haycock Mountain (Ma); Point Pleasant (Fo); (Pipersville).

Acer saccharum Marsh. SUGAR MAPLE.

Upland woods and banks in loose soil; infrequent.

Narrowsville (L); Spinnerstown (L); Sellersville (F); Telford (B).

Acer nigrum Michx. f. BLACK SUGAR MAPLE.

(*A. saccharum,* var. *nigrum* of Gray's Manual, ed. 7.)

Low moist ground and alluvial banks; occasional.

Milford Square (F); Rockhill (F); 2 m. west of Sellersville (F); Morrisville (L); (Narrowsville).

***Acer platanoides** L. NORWAY MAPLE.

Established in fence rows and waste ground; rare.

Aquetong (L); Bristol (B); (Doylestown, according to J. Kirk Leatherman but no herbarium material found).

***Acer campestre** L.

Rarely naturalized.

Yardley (L, July 28, 1928).

Acer saccharinum L. SILVER MAPLE.

Low woods, thickets and banks; frequent.

Narrowsville (V&L); Point Pleasant (L); Warrington (L); Penns Park (L); Tullytown (B); Andalusia (L).

Acer rubrum L. RED MAPLE.

Damp slopes, low woods, thickets and swamps; common.

Monroe (R–R); Spinnerstown (L); Hagersville (B); Sellersville (F); Danboro (B); Warrington (L); Pineville (B).

Acer rubrum L., var. **tridens** Wood.

(*Acer carolinianum* of authors.)

Low ground of the Coastal Plain; locally abundant.

Morrisville (L); Turkey Hill (L); Emilie (B); Tullytown (M) (St).

Acer Negundo L. BOX ELDER.

Stream banks and alluvial thickets; frequent.

Upper Black Eddy (T); Point Pleasant (B); Churchville (B); Bristol (B); Croydon (B); (Sellersville).

BALSAMINACEAE (TOUCH-ME-NOT FAMILY)

Impatiens pallida Nutt. PALE TOUCH-ME-NOT.

(*I. aurea* of Fretz's Flora.)

Moist rich soil in shady places and along banks; frequent along the Delaware River.

Narrowsville (F); Ottsville (B); Pipersville (F); Point Pleasant (F); Brownsburg (L); Washington's Crossing (Me).

Impatiens biflora Walt. SPOTTED TOUCH-ME-NOT.

Moist or yet shady places; frequent.

Monroe (R–R); Doylestown (Me); Aquetong (L); Tullytown (L).

RHAMNACEAE (BUCKTHORN FAMILY)

Ceanothus americanus L. NEW JERSEY TEA.

Dry open woods and thickets and fields in sterile soil; frequent.

Nockamixon (J); Haycock Mountain (B); Finland (L); Rocky Ridge (W); Rockhill (M); Perkasie (Pr); Doylestown (Me); Richboro (L).

VITACEAE (VINE FAMILY)

Parthenocissus quinquefolia (L.) Planch. VIRGINIA CREEPER.

(*Psedera quinquefolia* of Gray's Manual, ed. 7.)

Woods and thickets especially in low ground; frequent.

Monroe (R–R); Ottsville (L); Sellersville (F); Doylestown (Me); Neshaminy (Mc).

This generic name is included among the "nomina conservanda" of the International Code since 1910.

Vitis labrusca L. NORTHERN FOX GRAPE.

Woods, thickets and stream banks; frequent.

Durham (F); Richlandtown (B); Spinnerstown (L); Rockhill (F); Telford (B); Neshaminy (Mc); Fallsington (L).

***Vitis Labruscana** Bailey.

See Bailey's Manual of Cultivated Plants, 478 (1924).

Escaped from cultivation; occasional.

Ottsville (B); Spinnerstown (L); Tullytown (L).

According to Dr. Bailey, this species includes many of the common grapes of cultivation, as Concord, Worden, Hartford, Isabella, Niagara, Catawba and others.

Vitis aestivalis Michx. Summer Grape. Pigeon Grape.

Thickets and woods; frequent.

Monroe (B); Nockamixon (P); Haycock Mountain (B); Rockhill (F) (W); Richboro (L); (Sellersville); (Solebury Township).

A sterile specimen from Haycock Mountain (Mc, September 13, 1930) approaches *V. bicolor* LeConte which was reported from the County by Porter. This specimen is here regarded as only a glabrous form of *V. aestivalis.*

Vitis cordifolia Michx. Frost Grape. Chicken Grape.

Thickets and along stream banks; common.

Monroe (B); Nockamixon (J) (M); Haycock Mountain (B); Rockhill (J) (M); Curley Hill (B); Point Pleasant (F); Jamison (Dr); Richboro (L); Buckmanville (L); Grenoble (L); Newtown (Dr); Morrisville (L); Emilie (L).

Vitis vulpina L. River-bank Grape.

Banks of the Delaware River; locally abundant.

Monroe (R–R); Nockamixon (P) (F) (M) (C); Point Pleasant (B); Yardley (L); (New Hope).

TILIACEAE (linden family)

Tilia americana L. Linden. Basswood.

Rich woods, fields and fence rows; frequent throughout except on Coastal Plain, where it is rare.

Monroe (R–R); Haycock Mountain (L); Rockhill (L); Argus (L); Sellersville (F); Ottsville (B); Point Pleasant (L); Yardley (L).

MALVACEAE (mallow family)

***Abutilon Theophrasti** Medic.

(*A. Abutilon* of Fretz's Flora.)

Waste places, cultivated fields and roadsides; frequent.

Monroe (R–R); Sellersville (F); Doylestown (Me); Yardley (L); Bristol (F).

***Sida spinosa** L.

Adventive in waste places; rare.

Monroe (R–R, July 19, 1887); Bristol (F, August, 1880, and Sept. 15, 1898).

[Althaea officinalis L.

Reported from the County by Porter but no material was found.]

Althaea rosea Cav. HOLLYHOCK.

Escaped from cultivation; occasional.

Perkasie (F); Plumstead Township (F); (Rockhill); (Sellersville).

***Malva rotundifolia** L. COMMON MALLOW. CHEESES.

Cultivated fields, roadsides and waste places; occasional.

Monroe (R–R); Telford (B); Doylestown (Me); Brownsburg (L); Churchville (B); Tullytown (K).

***Malva verticillata** L.

(*M. crispa* of Fretz's Flora.)

An escape from cultivation, Mount Pleasant, Hilltown Township (F, August, 1882).

***Malva sylvestris** L.

Escaped along roadsides; rare.

Monroe (R–R); Sellersville (F).

***Malva sylvestris** L., var. **mauretiana** (L.) Boiss.

Rhodora, xii. 140 (1910).

Similar situations as species; rare.

Telford (B, August 18, 1909).

This variety has loose spreading hairs, the leaves are obtusely lobed and the flowers deep purple, while in the typical species the plant is glabrate with leaves rather prominently angulate lobed and reddish purplish flowers.

***Malva moschata** L.

Naturalized in waste places, fields and roadsides; occasional.

Sellersville (F); Doylestown (Me); Furlong (B); Bycot (K).

***Callirhoe involucrata** (A. & G.) Gray.

A rare introduction from the western United States.

Doylestown (A. S. Martin, August 19, 1904).

***Hibiscus syriacus** L. Rose of Sharon.

Rarely established in thickets and along roadsides.

Quakertown (F); Bristol (F).

Hibiscus Moscheutos L. Rose Mallow.

River banks and marshes, chiefly on the Coastal Plain; locally abundant.

Point Pleasant (B); Morrisville (Dr); Tullytown (B); Bristol (L); Andalusia (Ma).

The Point Pleasant specimen has white petals with a crimson blotch at the base. It is the form sometimes known as *H. oculiroseus* Britton but is generally considered as only a color form.

***Hibiscus Trionum** L. Flower-of-an-hour.

A weed of cultivated ground, railroad banks and waste places; frequent.

Pleasant Valley (B); Sellersville (B); Telford (F); Doylestown (Me); Neshaminy (Mc); Furlong (L); Oxford Valley (B).

HYPERICACEAE (st. john's-wort family)

Ascyrum stans Michx. St. Peter's-wort.

Dry sandy soil of Coastal Plain; rare.

Bristol (D, August 28, 1864.)

Ascyrum hypericoides L. St. Andrew's Cross.

Dry to moist sandy soil of the Coastal Plain; occasional.

Turkey Hill (B); Penn Valley (J); Bristol (Ma); Hulmeville).

Hypericum Ascyron L. Great St. John's-wort.

Alluvial banks along the Delaware River; rare.

Monroe (R–R); Narrowsville (Bn) (F) (L); Point Pleasant (F).

***Hypericum perforatum** L. Common St. John's-wort.

A weed of roadsides, fields and waste places; common.

Kintnersville (Dr); Ottsville (L); Pleasant Valley (B); three miles north of Sellersville (Dr); Telford (B); Doylestown

(Me) (B); Neshaminy (Me); Neshaminy Falls (M); Bristol (B); Andalusia (L).

Hypericum punctatum Lam. SPOTTED ST. JOHN'S-WORT.

(*H. maculatum* Walt.)

Moist open woods, thickets and fence rows; frequent.

Upper Black Eddy (Tr–P); Haycock Mountain (Tr–P); Rocky Ridge (L); Almont (F); Erwinna (L); Neshaminy (M); Brownsburg (L); Washington's Crossing (Dr); Tullytown (B).

Hypericum prolificum L. SHRUBBY ST. JOHN'S-WORT.

Along roadside, Richlandtown (Fi, August 28, 1905).

Hypericum adpressum Bart.

Moist sandy shores on the Coastal Plain; occasional.

Tullytown (D) (Ma) (F) (C); Bristol (Bn) (C).

Hypericum ellipticum Hook.

Moist ground; infrequent.

Monroe (R–R); Upper Black Eddy (Tr–P); Point Pleasant (L); (Solliday's Island); (Morrisville).

Hypericum denticulatum Walt.

(*H. virgatum* Lam.)

Rhodora, xvii, 134 (1915).

Wet soil; rare.

Bristol (Ma, 1865, and August, 1886).

Hypericum boreale (Britton) Bicknell.

Marshes and borders of ponds; rare and local.

Tullytown (Dr); Bristol (Dr) (B).

Hypericum mutilum L.

Low ground; frequent.

Upper Black Eddy (Tr–P); Rockhill (F); Doylestown (Me); Neshaminy (Mc); Yardley (Dr); Fallsington (L); Morrisville (Dr); Bristol (L); Andalusia (L).

Hpyericum gymnanthum Englem. & Gray.

Moist sandy ground; rare.

Bristol (Ma, August, 1865).

Hypericum canadense L.

Moist to dry sandy ground; common.

Bursonville (R–R); Three Mile Run (B); Plumstead (B); Doylestown (F) (Me); Yardley (Dr); Morrisville (L); Roelofs (L); Fallsington (L); Turkey Hill (B); Tullytown (Dr).

Hypericum dissimulatum Bicknell.

Bul. Torr. Bot. Club xl. 610, (1913).

Moist soil; rare.

Bristol (Dr, Sept. 14, 1924.)

Closely allied with *H. mutilum* and *H. canadense.* It differs from the former by its stricter less branched habit, narrower leaves and longer or more ellipsoid purple capsules and from the latter by its broader, often more clasping leaves, more diffuse inflorescence and smaller often ellipsoid capsules.

Hypericum gentianoides (L.) BSP. Orange Grass.

(*Sarothra gentianoides* L.)

Dry sandy or gravelly sterile soil; common.

Rockhill (F); Doylestown (Me); Neshaminy (Mc); Turkey Hill (B); Tullytown (B); Bristol (F).

Hypericum virginicum L. Marsh St. John's-wort.

(*Triadenum virginicum* (L.) Raf.)

Wet soil; frequent on Coastal Plain, rare elsewhere.

Ridge Valley (F); Turkey Hill (B); Tullytown (Dr); Emilie (Dr); Bristol (L).

ELATINACEAE (waterwort family)

Elatine americana (Pursh) Arn. Waterwort.

Muddy places; rare.

Banks of Delaware River, Andalusia (Ma, August, 1866).

Mud island in Delaware River, Andalusia (W, August, 1898).

CISTACEAE (rockrose family)

Helianthemum canadense (L.) Michx. Frostweed.

Dry sandy and gravelly places; frequent.

Monroe (R–R); Quakertown (C); Sellersville (F); Doylestown (Me); Furlong (B); Buckingham Valley (B); Lahaska (L); Bristol (F); (Tullytown).

Helianthemum Bicknellii Fernald.

(*H. majus* of authors.)

Rhodora, xxi. 36 (1919).

Similar situations as preceding; less frequent.

Rockhill Township (F); Sellersville (F); Solliday's Island (F).

Helianthemum proprinquum Bicknell.

Rhodora, xxi. 36 (1919), and Bull. Torr. Bot. Club xl. 615 (1913).

Dry open soil and sandy thickets; occasional in the lower and central districts.

Point Pleasant (L); Furlong (L); Turkey Hill (L); Penn Valley (C); Edgley (L).

This is the Coastal Plain form of *H. Bicknellii* and is more common southward. It is a lower plant, with longer-pedicelled petaliferous flowers which are short-racemose to subcorymbose.

Lechea villosa Ell.

Dry or sandy sterile soil of roadsides, fields and waste places; occasional.

Monroe (R–R); Sellersville (F); Yardley (Dr); Bristol (D); Andalusia (Dr).

Lechea minor L.

Dry soil; rare.

Glen Lake (F, August 19, 1904), Bristol (D, July 30, 1865).

[**Lechea intermedia** Leggett.

A northern species reported from Argus but no material was found to cover the record.]

Lechea maritima Leggett. BEACH PINWEED.

Sandy soil of Coastal Plain; rare.

Bristol (Ma, August, 1865).

Lechea Leggettii Britton & Hollick. PINWEED.

Dry or sandy open places; frequent.

Ottsville (L); Perkasie (F); Sellersville (F); Doylestown (Me); Furlong (L); Buckingham (K); Fallsington (B); Bristol (B).

Lechea racemulosa Lam.

Dry sandy or rocky soil; rare.

Monroe (R–R); Keller's Church (B); Bristol (B).

VIOLACEAE (VIOLET FAMILY)

Hybanthus concolor (Forst.) Spreng. GREEN VIOLET.

(*Cubelium concolor* of Fretz's Flora.)

Only one sheet found labelled "Bucks County, Pa., John Butterfoss, May 16, 1899." This probably came from somewhere in the Delaware Valley. There is an old record of its occurrence at Point Pleasant but no herbarium material to cover the record was seen.

Viola pedata L. BIRD-FOOT VIOLET.

Dry fields and open woods; rare.

Durham Furnace (L); Buckwampum Mountain (L).

Viola pedata L., var. **linariloba** DC.

Similar situations as the species; rare.

Durham (Mo); Springfield Township (F).

This is the variety with the petals all of the same light blue color, while in the typical species the two upper petals are dark purple.

Viola cucullata Ait. MARSH BLUE VIOLET.

Wet meadows, swamps and stream banks; frequent to common.

Pleasant Valley (B); Spinnerstown (L); Rockhill (M); Sellersville (F); Doylestown (Me); Erwinna (L); Yardley (L); Morrisville (L); Tullytown (M) (F) (C).

Viola affinis LeConte

Rich woods and thickets mostly in alluvial soil; frequent except in Coastal Plain.

Milford Square (L); Sellersville (F); Hilltown Township (F); Roelofs (L); Tullytown (M) (C).

Viola papilionacea Pursh. HOODED BLUE VIOLET.

Moist meadows, woods and shaded alluvial soil; frequent.

Durham Furnace (L); Durham (L); Sellersville (F); Doylestown (Me); Point Pleasant (P); Penn Valley (C) (F); Tullytown (C).

Included in this species, is the *V. papilionacea domestica* of Fretz's Flora (*V. domestica* Bicknell). The status of this violet is very doubtful and many recent authors place it under *V. papilionacea.*

Viola Stoneana House.

(*V. septemloba* Stone, not LeConte.)

Moist woodlands; rare.

Spinnerstown (L, May 26, 1929).

Viola palmata L.

Dry rich woods and banks; common throughout except on Coastal Plain where it has not been reported.

Nockamixon (L); Narrowsville (L); Ringing Rocks, Bridgeton Township (F); Buckwampum Mountain (B); Revere (L); Haycock Township (F); Quakertown (K); Spinnerstown (L); Finland (F); Argus (Bn) (J) (F); Doylestown (Me).

Viola triloba Schwein.

(Includes *V. palmata dilatata* and *V. palmata variabilis* of Fretz's Flora.)

Dry to moist rich woods chiefly in upper districts; locally abundant.

Finland (F); Rockhill (M); Argus (F); Doylestown (Me); Aquetong (K); Bridge Valley (Dr); (Nockamixon).

By some writers *V. palmata variabilis* is considered a hybrid, *V. papilionacea* × *triloba,* Bull. Torr. Bot. Club, xxxix. 90 (1912).

Viola sororia Willd.

Dry to moist open woods, thickets, pastures and fields; frequent in upper districts.

Ottsville (L); Quakertown (F); Rockhill (M); Perkasie (F); Argus (F); Sellersville (F).

[**Viola Angellae** Pollard.

(*V. palmata* × *triloba* Brainerd.)

Reported from Haycock and Ridge Valley in Fretz's Flora. The material on which these records were based has been located and all of it proves to be *V. palmata.*]

Viola hirsutula Brainerd. Southern Wood Violet.

(*V. villosa* Walt.)

Rich dry soil of open woods and thickets; frequent in upper districts.

Ottsville (L); Pleasant Valley (F); Spinnerstown (L); Finland (F); Argus (L) (St); Brownsburg (B).

Viola fimbriatula Sm.

Dry fields and woods; frequent to common.

Monroe (F); Durham (L); Buckwampum Mountain (F); Sellersville (F); Bycot (Bn).

Viola sagittata Ait.

Similar situations; common.

Durham (R–R); Ottsville (L); Rockhill Township (F); Sellersville (F); Doylestown (Me); a glabrous form, Yardley (Me); Tullytown (M) (F) (C); Roelofs (L); a glabrous form, Fallsington (L).

Viola emarginata (Nutt.) LeConte.

Fields, dry woods and hillsides; occasional.

Milford Township (F); Perkasie (F); Sellersville (F); Blooming Glen (F); Tullytown (C).

Viola Brittoniana Pollard

Moist sandy soil of the Coastal Plain; locally abundant.

Tullytown (F) (C); Bristol (D); Croydon (C); (Penn Valley).

Viola lanceolata L. Lance-leaved Violet.

Low meadows, swamps and borders of ponds; occasional.

Gardenville (L); Point Pleasant (F); Bycot (B); Tullytown (M) (F) (C); Bristol (B); (Quakertown); (Doylestown).

Viola primulifolia L. Primrose-leaved Violet.

Moist woods meadows and swamps; frequent on the Coastal plain, occasional elsewhere.

Point Pleasant (F); Bycot (B); Yardley (L); Fallsington (L); Roelofs (L); Tullytown (F); Bristol (F).

Viola pallens (Banks) Brainerd. Sweet White Violet.

(*V. blanda* of Fretz's Flora.)

Rich soil in moist or wet woods, boggy meadows and swamps; occasional.

Springfield Township (F); Spinnerstown (L); Finland (F); Rockhill Township (F); Morrisville (L).

Viola blanda Willd.

(*V. LeConteana* of Fretz's Flora.)

Woodlands of upper districts; occasional.

Kintnersville (F); Nockamixon (H); Point Pleasant (F); Doylestown (Me); Oxford Valley (L).

Viola rotundifolia Michx. Early Yellow Violet. Round-leaved Violet.

Damp woods and banks; rare.

Milford Township (F, May, 1881); Cuttalossa Valley, near Lumberville (L).

(Tuckertown. This record in Keller & Brown's Fl. of Phila. and Vic., 228 (1905) is apparently an error. No such place is known in Bucks County.)

[Viola odorata L.

Reported from the County as an escape from gardens. No material found.]

Viola pubescens Ait. Downy Yellow Violet.

Dry to damp woodlands; frequent except in lower end.

Pleasant Valley (B); Quakertown (L); Spinnerstown (L); Milford Square (L); Finland (F); Rockhill Township (F); Carversville (L); Doylestown (Me); Warrington (L); Aquetong (K); Center Bridge (B).

Viola eriocarpa Schwein.

(*V. scabriuscula,* in part, of Gray's Manual, ed. 7.) Bul. Torr. Bot. Club, xxxviii. 194 (1911).

Dry to damp woods and thickets; apparently not common.

Geryville (I); Milford Square (L); George School (B).

Viola eriocarpa Schwein., **var. leiocarpa** Fernald & Wiegand.

(*V. scabriuscula,* in part, of Gray's Manual, ed. 7.) Rhodora, xxiii. 275 (1921).

Similar situations; this apparently is the common form in the County.

Ottsville (L); Quakertown (L); Shelly (F); Milford Square (F); Sellersville (F); Pipersville (L); Point Pleasant (F); Aquetong (L).

In this variety the capsule is glabrous while in the typical species it is woolly.

Viola canadensis L. CANADA VIOLET.

Rich gravelly or sandy woodland; very local but abundant at the Nockamixon station.

Nockamixon (P) (C) (F) (Bn); Trap rock range, Quakertown (Ma, June, 1866).

Viola striata Ait. CREAMY VIOLET.

Low shady places and alluvial banks; frequent except on Coastal Plain.

Durham Furnace (L); Sundale (L); Pleasant Valley (B); Bedminster Township (F); Brownsburg (L); Rushland (L).

Viola conspersa Reichenb. DOG VIOLET.

(*V. labradorica* of Fretz's Flora.)

Low soil of pastures, meadows and borders of woods; common except on Coastal Plain where it is rare or absent.

Narrowsville (C); Pleasant Valley (Bn); Spinnerstown (B); Rockhill (M); Argus (F); Sellersville (F); Erwinna (L); Pipersville (L); Point Pleasant (L); Doylestown (Me); Aquetong (L).

Viola rostrata Pursh. LONG-SPURRED VIOLET.

Shaded hillsides and banks; frequent in upper districts.

Finland (F); Argus (C) (K) (J); Rockhill Station (F); Pipersville (L); Point Pleasant (Me); Brownsburg (L); (New Hope).

***Viola tricolor** L. HEART'S-EASE. PANSY.

A rare escape.

Sellersville (F, June, 1881); (Carversville).

Viola Rafinesquii Greene. WILD PANSY.

Open woods and fields, mostly along the Delaware River; locally abundant.

Riegelsville (Dr. Cally); Durham Furnace (L); Nockamixon (Fo); Upper Black Eddy (T); Carversville (Gr); New Hope (B); Brownsburg (B); Washington's Crossing (L); (Sellersville); (Yardley).

THYMELAEACEAE (MEZEREUM FAMILY)

Dirca palustris L. LEATHERWOOD.

Damp or rich woods; rare.

Rocky woods, Revere (L, July 6, 1909) (W, April 30, 1911); Cuttaloosa Valley (J. H. Butterfoss–R, 1887).

LYTHRACEAE (LOOSESTRIFE FAMILY)

Rotala ramosior (L.) Koehne.

Marshy field, Bristol (Dr, September 14, 1924).

Decodon verticillatus (L.) Ell. WATER WILLOW.

Swampy ground and shallow water; a plant chiefly of the Coastal Plain; rare.

A single plant in stone quarry, probably introduced, Sellersville, (F, July, 1881); Penn Valley (J); Oxford Valley (L).

Lythrum Hyssopifolia L.

Wet or sterile soil; rare.

Plumstead Township (F, 1868 and August, 1870).

Lythrum Salicaria L. SPIKED LOOSESTRIFE.

Wet meadows, swamps and river banks; common along the Delaware River, rare elsewhere.

Narrowsville (J); Rockhill (F); Point Pleasant (F); Brownsburg (B); Washington's Crossing (Me); Morrisville (B); Penns Manor (F); Bristol (Dr); Andalusia (L).

Lythrum alatum Pursh.

Damp soil, Rockhill Station (George Redles, 1931); damp clayey meadow swale, Bristol (L, August 5, 1922).

Cuphea petiolata (L.) Koehne. Clammy Cuphea.

Dry fields, pastures and banks; common.

Durham (R–R); Haycock Mountain (B); Quakertown (B); Perkasie (Pr); Sellersville (F); Telford (B); Chalfont (L); Doylestown (F); Bristol (B).

MELASTOMACEAE (melastoma family)

Rhexia virginica L. Meadow Beauty.

Wet sandy soil; locally abundant on Coastal Plain, rare elsewhere.

Yardley (Dr); Turkey Hill (B); Tullytown (C); Bristol (M) (F); (Quakertown); a specimen in the George School Herbarium labelled, "4th and Mill Sts." by Frank Ball was probably collected at Quakertown.

Rhexia mariana L.

Sandy swamps on Coastal Plain; rare.

Tullytown (C); Bristol (C) (M) (F); (Penn Valley).

ONAGRACEAE (evening primrose family)

Ludvigia alternifolia L. Seed Box.

Swamps and borders of ponds; frequent.

Monroe (R–R); Upper Black Eddy (Tr–P); Rockhill (F); Doylestown (Me); Morrisville (Dr); Turkey Hill (B).

Ludvigia sphaerocarpa Ell.

Swamp ground of the Coastal Plain; rare.

Swamp, northwest of Bristol (D).

Ludvigia palustris (L.) Ell. Water Purslane.

(*Isnardia palustris* L.)

Ditches, wet shores and swamps; common.

Cauffman's Hill (Tr–P); Argus (B); Lumberville (L); Doylestown (Me); Neshaminy (Me); Washington's Crossing (Me); Yardley (L); Bristol (L); Andalusia (L).

Epilobium angustifolium L. Fireweed. Great Willow Herb.

(*Chamaenerion angustifolium* (L.) Scop.)

Dry woodlands and open places, especially recent clearings; frequent.

Durham (R–R); Almont (F); Sellersville (F); Telford (B); Doylestown (Me); (Springfield); (Rockhill); (Grenoble); (Bristol).

Epilobium molle Torr.

Boggy soil, Finland (L, September 6, 1923).

Epilobium densum Raf.

(*E. lineare* of authors.)

Similar situations; more frequent.

Springfield (F); Finland (L); Morrisville (L).

Epilobium coloratum Muhl.

Low moist soil and wet cliffs; common.

Buckwampum Mountain (L); Pleasant Valley (B); Steinsburg (Wi); Rockhill (F); Weisel (Sm); Hagersville (B); Telford (B); Doylestown (Me); Neshaminy (Mc); Yardley (L); Morrisville (Dr); Bristol (Dr); Andalusia (L).

Epilobium glandulosum Lehm., var. **adenocaulon** (Haussk.) Fernald.

(*E adenocaulon* of authors.) Rhodora, xx, 34 (1918).

Low ground; rare.

Lumberville (Bn, July 4, 1899).

Oenothera biennis L. Common Evening Primrose.

(*Onagra biennis* (L.) Scop. of Fretz's Flora.)

Dry woods, fields and waste places; common.

Sellersville (F); Lumberville (L); Washington's Crossing (Me).

This species is subject to extensive mutation and further study may reveal several forms within the County.

Oenothera laciniata Hill.

Dry sandy soil; rare.

Bristol (F, June 11, 1898).

Oenothera perennis L.

(*Kneiffia pumila* of Fretz's Flora and *O. pumila* of Gray's Manual, ed. 7.) Bul. Torr. Bot. Club, xlvi. 372 (1919) and Rhodora, xxv. 47 (1923).

Sterile soil in dry to damp open situations; common.

Revere (L); Finland (Mu); Quakertown (Bn) (C); Smoketown (W); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc); Woodbourne (J); Tullytown (C); Emilie (L); Croydon (Dr).

Oenothera hybrida Michx.

(*O. fruticosa,* var. *hirsuta* of Gray's Manual, ed. 7. *Kneiffia fruticosa* and *K. fruticosa pilosella* of Fretz's Flors.) Rhodora, xx. 51 (1918).

Moist to somewhat dry open situations; common except in lower districts where it is rare or unknown.

Monroe (R–R); Upper Black Eddy (Tr–P); Shelly (F); Rockhill (W); Sellersville (F); Telford (B); Dublin (Dr); Point Pleasant (L).

Oenothera fruticosa L. Common Sundrops.

(*O. linearis* and *O. longipedicellata* of Gray's Manual, ed. 7. *Kneiffia longipedicellata* of Fretz's Flora.) Rhodora, xx. 50 (1918).

Meadows, fields and open woods; frequent.

Rockhill (W); Telford (B); Doylestown (Me); Tullytown (F) (Bn).

***Oenothera speciosa** Nutt. White Evening Primrose.

(*Hartmannia speciosa* of authors).

Clumps in dry grass field. Trumbauersville (F, June 21, 1902) (Mu, June 24, 1909).

Gaura biennis L.

Dry banks; common along the Delaware River, rare elsewhere.

Monroe (R–R); Upper Black Eddy (Tr–P); Spinnerstown (Bl–G); Tohickon Creek, Bedminster Township (F); Lumberville (F); Chalfont (L); Brownsburg (L); Yardley (Me); Tullytown (B).

Circaea latifolia Hill. Enchanter's Nightshade.

(*C. lutetiana* of Gray's Manual, ed. 7.) Rhodora, xvii. 222 (1915) and xix. 87 (1917).

Moist or dry rich woods and thickets; rare in lower end, common elsewhere.

Nockamixon (J); Sundale (L); Shelly (F); Rockhill (F); Argus (B); Carversville (L); Doylestown (Me); Neshaminy (Me); Brownsburg (L); Woodbourne (L).

HALORAGIDACEAE (WATER MILFOIL FAMILY)

Myriophyllum verticillatum L.

A sheet from Bristol (D) found in the Porter Herbarium.

The collector states on the label, "Common in all our ditches, but have never found it in flower or fruit, July 30, 1865."

This is the basis for Porter's record for Bucks County. The condition of the material renders it difficult to determine. It evidently is not *M. heterophyllum,* so for want of evidence to the contrary, Porter's determination is accepted.

Myriophyllum heterophyllum Michx. WATER MILFOIL.

Ponds, ditches and slow streams; rare.

Tohickon (Mo); Tullytown (B); (Applebachsville).

Proserpinaca palustris L. MERMAID WEED.

Shallow ditches and swamps; infrequent.

Rockhill (L); Argus (F); Sellersville (F); Bristol (Me).

Proserpinaca pectinata Lam.

Sandy swamps of Coastal Plain; rare.

Bristol, (Ma, 1865).

ARALIACEAE (GINSENG FAMILY)

[Aralia spinosa L.

Reported from Anadlusia (Ma) but no specimens found.]

Aralia racemosa L. SPIKENARD.

Rich woods; frequent except in lower districts.

Nockamixon (Ba); Rockhill (F); Argus (B); Lower Black Eddy (B); Doylestown (Me); New Hope (B).

Aralia nudicaulis L. WILD SARSAPARILLA.

Dry woods and banks; common.

Buckwampum Mountain (Me); Pleasant Valley (B); Quakertown (B); Rockhill (F); Trumbauersville (F); Doylestown (Me); Edison (Fo); Aquetong (K); Tullytown (M).

Panax quinequefolium L. GINSENG.

Rich woods; rare.

Upper Black Eddy (Bn); Aquetong (K); Lower Solebury Township probably near New Hope (Ws–G).

Panax trifolium L. DWARF GINSENG.

Rich moist woods and thickets; frequent.

Durham (R–R); Quakertown (F); Doylestown (Me); New Britain (B); Yardley (L); Fallsington (L); Penn Valley (C); Bristol (F).

UMBELLIFERAE (PARSLEY FAMILY)

[Eryngium aquaticum L.

(*E. virginianum* Lam.)

Reported from Bristol (Ma) but no material has been found.]

Sanicula marilandica L. SANICLE.

Rich woods and thickets; frequent.

Revere (L); Sundale (L); Richlandtown (L); Milford Square (L); Spinnerstown (B); Rockhill (F); Rocky Ridge (W); Argus (F); Pipersville (F); Doylestown (Me).

Sanicula gregaria Bicknell.

Moist soil of woods and thickets; frequent except in lower districts.

Nockamixon (B); Quakertown (F); Rockhill (M); Three Mile Run (F); Point Pleasant (Bn); Aquetong (K); New Hope (L); Brownsburg (L); (Durham); (Deep Run); (Doylestown).

Sanicula canadensis L.

Dry woods and thickets; common.

Durham Township (F); Revere (L); Haycock Mountain (Mc); Passer (Wi); Shelly (B); Rockhill (F); Argus (Sm); Sellersville (F. L. Bassett); Three Mile Run (F); Buckingham (L); Brownsburg (L); Yardley (Fo).

Sanicula trifoliata Bicknell.

Rich woods and thickets; occasional.

Kintnersville (L); Nockamixon (F); Narrowsville (Bn); Point Pleasant (F); Lumberville (Bn); Penns Park (L).

Hydrocotyle umbellata L.

Swamps and low ground along streams; infrequent.

Chalfont (L); Edison (F); Bridge Valley (Dr); Penn Valley (B); Bristol (Ma) (F); (New Britain).

[Hydrocotyle Canbyi Coult. & Rose.

Reported from Edison near Doylestown by A. S. Martin. Material proves to be *H. umbellata.*]

Hydrocotyle americana L. WATER PENNYWORT.

Wet, often partly shaded situations; frequent.

Monroe (R–R); Finland (B); Argus (B); Sellersville (B); Telford (B); Grenoble (L).

Chaerophyllum procumbens (L.) Crantz. WILD CHERVIL.

Thickets and banks in moist soil; frequent.

Nockamixon (M); Almont (L); Morrisville (L); Tullytown (B); Neshaminy Falls (Fo); (Point Pleasant).

Osmorhiza Claytoni (Michx.) Clarke. SWEET CICELY.

(*Washingtonia Claytoni* of authors.)

Woods and shady banks; common except on Coastal Plain where it is apparently absent.

Nockamixon (V & L); Ottsville (L); Pleasant Valley (B); Shelly (F); Milford Square (F); Spinnerstown (L); Rockhill (F); Lumberville (L); Doylestown (Me); Buckingham (L); Woodbourne (Bn).

Osmorhiza longistylis (Torr.) DC.

(*Washingtonia longistylis* of authors.)

Similar situations but more likely to be in alluvial soil; frequent.

Monroe (R–R); Milford Square (L); Spinnerstown (B); Harr's Dam, near Telford (F); Fountainville (Gr); Lumberville (L); Center Bridge (B); Woodbourne (J) (Bn); Morrisville (L).

***Conium maculatum** L. Poison Hemlock.

A poisonous weed; sparingly introduced.

Carversville (Mo); Point Pleasant (F); (Lumberville); (New Hope).

Ptilimnium capillaceum (Michx.) Raf.

Brackish marsh along Common Creek, Tullytown (B, August 30, 1929).

Cicuta maculata L. Water Hemlock. Spotted Cowbane.

Marshes, wet meadows and swamps; common.

Monroe (R–R); Finland (L); Rockhill (F) (M); Sellersville (F. L. Bassett); Neshaminy (Mc); Bycot (J); Andalusia (L).

Cicuta bulbifera L.

Swamps and wet soil; frequent.

Monroe (R–R); Point Pleasant (F); Turkey Hill (B); Penn Valley (C); Tullytown (F) (C); Bristol (L); Andalusia (Me).

[Carum Carvi L.

An introduced weed reported from Rockhill (Br) but no specimen found.]

***Sium suave** Walt. Water Parsnip.

(*S. cicutaefolium* of authors.) Rhodora, xvii. 131 (1915).

Swamps and muddy borders of ponds and streams; frequent.

Ottsville (B); Weisel (B); Rockhill (F); Point Pleasant (L); Tullytown (L); Andalusia (L).

***Sium suave** Walt., forma **Carsoni** (Durand) Fassett.

(*S. Carsoni* Durand.) Rhodora, xxiii. 113 (1921).

A weak aquatic form; rare and local.

Rockhill Township (F); Sellersville (F).

Cryptotaenia canadensis (L.) DC. Honewort.

(*Deringa canadensis* of Fretz's Flora.)

Woods, thickets and banks; common.

Monroe (R–R); Erwinna (Me); Ottsville (L); Springtown (L); Pleasant Valley (B); Argus (B); Sellersville (F); Farm School (B); Doylestown (Me); Neshaminy (Mc); Buckingham (L); Pineville (Fo); Croydon (L); Hulmeville (B).

Zizia aurea (L.) Koch. GOLDEN ALEXANDERS.

Damp fields, meadows and roadsides; frequent except on Coastal Plain where it is rare.

Nockamixon (H); Ottsville (L); Milford Square (L); Rockhill (F); Almont (L); Argus (W); Telford (B); Point Pleasant (L); Warrington (L); Rushland (V & L); Morrisville (L); (Sellersville).

Zizia cordata (Walt.) DC.

Open woods, thickets and dry slopes; frequent except in lower districts.

Nockamixon (B); Ottsville (L); Richlandtown (Me); Argus (L); Sellersville (F); Pipersville (L); Doylestown (Me); Neshaminy (Me); (Rockhill).

[**Foeniculum vulgare** Hill.

(*F. Foeniculum* of Fretz's Flora.)

Reported from the County but no herbarium material has been found.]

***Pimpinella Saxifraga** L. PIMPERNEL.

A European introduction, Wyker's Island (R, August 25, 1896); Pennington Island, near Erwinna (B, Oct. 1, 1932).

Taenidia integerrima (L.) Drude.

Open woods, thickets and banks; occasional.

Nockamixon (L); Ottsville (B); Deep Run (F); Pipersville (L); Lumberville (L); (Sellersville); (Neshaminy Creek).

***Bupleurum rotundifolium** L. THOROUGH-WAX.

A rare European introduction.

Rockhill (F, July, 1880); (Bensalem).

***Aethusa Cynapium** L. FOOL'S PARSLEY.

Roadside bank, Telford (B, August 26, 1917).

The material forming the basis for the Rockhill (M) record proves to be *Cicuta maculata.*

Thaspium trifoliatum (L.) Britton. MEADOW PARSNIP.

(*T. aureum,* var. *atropurpureum* of Gray's Manual, ed. 7.) Rhodora, xx. 52 (1918).

Woods, thickets and meadows; frequent.

Rockhill (M) (F); Perkasie (F); Dublin (L); Doylestown (Me); Aquetong (K); Lumberville (L); Center Bridge (B).

Thaspium trifoliatum (L.) Britton var. **flavum** Blake.

(*T. aureum* of authors.) Rhodora, xx. 52–53 (1918).

Similar situations as species; not frequent.

Rockhill (M); Sellersville (F).

[Thaspium barbinode (Michx.) Nutt.

Reported from along the Delaware River in Bucks County, but no herbarium material has been found from any station within the County. Specimens are extant from Northampton, Montgomery and Philadelphia Counties. This is one of the things which should be looked for carefully by collectors.]

***Pastinaca sativa** L. Parsnip.

Fields, roadsides and waste places; common.

Durham (R–R); Rich Hill (B); Point Pleasant (L).

Heracleum lanatum Michx. Cow Parsnip.

Low moist alluvial soil and roadsides; infrequent.

Riegelsville (R–R); Morrisville (L); Newportville (F); Neshaminy Falls (M); (Quakertown); (Doylestown); (Andalusia).

Oxypolis rigidior (L.) Raf.

Swampy places in lower districts; occasional.

Yardley (Me); Fallsington (L); Tullytown (F); (Penn Valley).

Angelica villosa (Walt.) BSP.

Dry open woods; occasional.

Upper Black Eddy (Tr–P); Rockhill (F); Almont (F); Doylestown (Me); Solebury Township (Ws–G).

***Daucus Carota** L. Carrot.

Fields, meadows and waste places; common.

Haycock Mountain (Mc); Sellersville (F); Doylestown (Me); Neshaminy (Mc); Bristol (L).

CORNACEAE (DOGWOOD FAMILY)

Cornus florida L. FLOWERING DOGWOOD.

Sandy or rocky woods; frequent.

Monroe (R–R); Haycock Mountain (B); Pleasant Valley (B); Argus (J); Finland (B); Sellersville (F); Lumberville (L); Doylestown (Me); Neshaminy (L); Brownsburg (B); Richboro (L); Oxford Valley (B).

Cornus rugosa Lam. ROUND-LEAVED CORNEL.

(*C. circinata* of Gray's Manual, ed. 7.) Rhodora, xii. 122 (1910).

Rocky open woods, thickets and banks; occasional.

Nockamixon (Le); Haycock Mountain (L); Rockhill (F); Brownsburg (L).

Cornus Amomum Mill. SILKY CORNEL. KINNIKINNIK.

Moist or wet soil; frequent.

Wyker's Island (R–R); Rockhill (F); Sellersville (F); Doylestown (Me); Neshaminy (Mc); Grenoble (L); Brownsburg (L); Yardley (L); Morrisville (Fo–P); Slickville (L); Bristol (Dr).

Cornus candidissima Mill.

(*C. paniculata* of Gray's Manual, ed. 7.) Rhodora, xxxiii. 71 (1931).

Thickets, hillsides and fence rows in dry to damp soil; frequent.

Nockamixon (Fo); Uhlertown (Me); Rockhill (M); Sellersville (F); Telford (B); Point Pleasant (L); Doylestown (Me); Lahaska (L); (Haycock Mt.); (New Hope).

Cornus alternifolia L. f.

Moist, well-drained soil along streams and borders of woods; frequent.

Buckwampum Mountain (L); Rockhill (F).

Nyssa sylvatica Marsh. SOUR GUM.

Low moist situations and on dry slopes; frequent.

Kintnersville (R–R); Spinnerstown (Bo); Rockhill (F) (M); Sellersville (F); Yardley (L); Tullytown (M).

ERICACEAE (HEATH FAMILY)

Clethra alnifolia L. SWEET PEPPERBUSH.

Wet soil; common on the Coastal Plain, rare elsewhere.

Buckingham (L); Fallsington (L); Tullytown (M); Bristol (C); Oxford Valley (B); Croydon (L); Andalusia (L); (Penn Valley).

Chimaphila umbellata (L.) Bart., var. **cisatlantica** Blake. PIPSISSEWA.

(*C umbellata* of Gray's Manual, ed. 7.) Rhodora, xix. 241 (1917).

Light soil in dry woods; not rare.

Revere (W); Haycock Mountain (L); Rockhill (F); Doylestown (Me).

Our eastern North American material is included under this variety. The species itself is restricted to Eurasia.

Chimaphila maculata (L.) Pursh. SPOTTED WINTERGREEN.

Similar situations as preceding; common.

Revere (W); Haycock Mountain (B); Springtown (L); Shelly (B); Finland (L); Rockhill (F); Dublin (L); Doylestown (Me); Neshaminy (Mc); Bycot (K); Aquetong (L); Center Bridge (L); Edgely (B).

Pyrola chlorantha Swartz, var. **convoluta** (Barton) Fernald.

Rhodora, xxii. 51 (1920).

Dry woods; rare.

Ottsville (L); (Point Pleasant).

The typical form of this species is considered by Fernald to be a northern plant which is not found south of New York. The variety is characterized by its larger flowers, the calyx being 4.8–6 mm. wide, whereas in the typical species it is only 3–4 mm. broad.

Pyrola elliptica Nutt. SHIN LEAF.

Rich moist or dry woods; rare on Coastal Plain; frequent elsewhere.

Upper Black Eddy (Bn); Ottsville (L); Revere (W); Buckwampum Mountain (L); Springfield Township (F); Rocky Ridge (B); Doylestown (Me); Center Bridge (L).

Pyrola rotundifolia L., var. **americana** Fernald. WINTERGREEN.

(*P. americana* of Gray's Manual, ed. 7. *P. rotundifolia* of Fretz's Flora.) Rhodora, xxii. 122 (1920).

Dry woods; frequent.

Durham Furnace (R–R); Bridgeton Township (L); Buckwampum Mountain (L); Revere (L); Springfield Township (F); Rocky Ridge (B); Doylestown (Me); Neshaminy (Mc); Bycot (K); Center Bridge (L); Yardley (L); Tullytown (C).

Monotropa uniflora L. INDIAN PIPE. CORPSE PLANT.

Saprophytic on humus in dry or moist woods; frequent.

Upper Black Eddy (Bn); Buckwampum Mountain (L); Haycock Mountain (B); Rocky Ridge (B); Sellersville (F); Dublin (B); Bycot (K); Buckmanville (L); Brownsburg (B); Yardley (Dr); Fallsington (L).

Monotropa Hypopitys L. PINESAP.

(*Hypopitys Hypopitys* of Fretz's Flora.)

Saprophytic on humus in dry, mostly oak, woods; rare.

Monroe (R–R, July 1, 1883); Rockhill (F, September, 1880).

This species and the next are separable with difficulty and are perhaps not specifically distinct.

Monotropa lanuginosa Michx.

Similar situation as preceding; rare.

Bycot (K); Buckmanville (L); Feasterville (B).

Rhododendron viscosum (L.) Torr. CLAMMY AZALEA.

(*Azalea viscosa* L.)

Swampy ground; frequent on Coastal Plain, rare elsewhere.

Buckingham (L); Roelofs (L); Yardley (L); Penn Valley (C); Oxford Valley (L); Bristol (F); one white flowered specimen and one pink flowered, Andalusia (L).

Rhododendron viscosum (L.) Torr., var. **glaucum** (Michx.) Gray.

Similar situations; rare.

Tullytown (C, June 15, 1896 and August 16, 1896).

Rhododendron nudiflorum (L.) Torr. PINXTER FLOWER.

Dry sandy or gravelly open woods and thickets, also borders of swamps; frequent.

Monroe (R–R); Finland (L); Rockhill (M); Almont (L); Dublin (L); Doylestown (Me); Neshaminy (Mc); Yardley (L); Roelofs (L); Bristol (St).

Rhododendron nudiflorum (L.) Torr., var. **glandiferum** Rehder.

Bull. Torr. Bot. Club, xxvii. 508 (1900) and Redher, Monog. Azalea 138 (1921).

Similar situations, rare.

Rockhill (F) (M); Rushland (L) (V & L).

Distinguished by its glandular corolla tube and calyx.

Rhododendron maximum L. GREAT LAUREL.

Damp rocky and gravelly situations in woods, on banks and along streams; locally abundant along the Delaware River; rare elsewhere.

Narrowsville (B); Point Pleasant (F); Lumberville (L); Buckingham (L); Morrisville (Pe); (Center Bridge); (New Hope).

Kalmia latifolia L. MOUNTAIN LAUREL. CALICO BUSH.

Woods and low thickets, preferring rocky or sandy soil; scarce.

Monroe (R–R); Erwinna (L); Tohickon Park (F); Doylestown (Me); Lahaska (L); Buckingham Valley (B).

Kalmia angustifolia L. SHEEP LAUREL. LAMBKILL.

Swamps, open sandy soil and hillsides; rare.

Buckwampum Mountain (B); Tullytown (C) (M); Bristol (F) (B).

Leucothoe racemosa (L.) Gray.

Swamps, moist thickets and banks; common on Coastal Plain, rare elsewhere.

Naceville (L) (F); Glen Lake (Bn); Yardley (L); Fallsington (L); Oxford Valley (L); Tullytown (C); Emilie (L); Bristol (B); Andalusia (L).

Lyonia mariana (L.) D. Don. STAGGER-BUSH.

(*Pieris mariana* of Fretz's Flora.)

Moist sandy soil; occasional in lower end.

Yardley (L); Roelofs (L); Bristol (L); (Buckingham Valley).

Lyonia ligustrina (L.) DC. PRIVET ANDROMEDA.

(*Xolisma ligustrina* of Fretz's Flora.)

Swampy to rather dry sandy or rocky soil; frequent.

Pleasant Valley (B); Finland (B); Rockhill (K) (F); Point Pleasant (L); Neshaminy (Mc); Buckingham (L); Yardley (Dr) (L); Oxford Valley (L); Bristol (L).

Epigaea repens L. TRAILING ARBUTUS. MAYFLOWER.

Damp to rather dry sandy or rocky woods; formerly locally abundant but becoming scarce.

Durham (L); Buckawmpum Mountain (B); Springtown (B); Aquetong (L); Buckingham Mountain (Me); Brownsburg (L); Center Bridge (L).

Gaultheria procumbens L. TEABERRY. CHECKERBERRY.

Dry to moist woods and clearings; common.

Kintnersville (R–R); Keelersville (Pr); Bedminster (F); Chalfont (L); Pipersville (L); Doylestown (Me); Yardley (L).

[Arctostaphylos Uva-ursi (L.) Spreng. BEARBERRY.

We have an old Bristol record but no material to cover the record. If any material from this station could be found, it would come in the range of *A. Uva-ursi,* var. *coactilis* Fernald & McBride, Rhodora, xvi, 212 (1914). The typical form of the species is a plant of the far North, while this form occurs from Canada south to Virginia, and is characterized by its canescent-tomentose branches.]

Gaylussacia frondosa (L.) T. & G.

Moist woods and thickets; rather scattered and local.

Buckwampum Mountain (L); Glen Lake (F) (Bn); Turkey Hill (Bn); Penn Valley (Bn); Emilie (L); Andalusia (L).

Gaylussacia baccata (Wang.) K. Koch. BLACK HUCKLEBERRY.

(*G. resinosa* of authors.)

Dry open sandy or gravelly woods and thickets; common.

Buckwampum Mountain (L); Pleasant Valley (Bn); Finland (L); Rockhill (M) (F); Almont (F); Dublin (L); Point Pleasant (L); Doylestown (Me); Center Bridge (B); Yardley (L); Roelofs (L); Turkey Hill (L); Tullytown (St).

Vaccinium stamineum L. DEERBERRY. SQUAW HUCKLEBERRY.

(*Polycodium stamineum* and *Polycodium candicans* of Fretz's Flora.)

Dry sandy or rocky woods, thickets and open places; frequent.

Buckwampum Mountain (Me); Haycock Mountain (B); Pleasant Valley (Bn); Rockhill (W) (F); Dublin (L); Doylestown (Me); Furlong (L); Aquetong (K); Lahaska (L); Glen Lake (F) (Bn); Turkey Hill (L); Bristol (C) (Dr).

The Glen Lake specimen is the basis for Fretz's record of *Polycodium candicans.*

Vaccinium pennsylvanicum Lam. LOW SWEET BLUEBERRY.

Dry sandy or gravelly open woods; rare.

Lahaska (L); Bristol (F); (Penn Valley).

Vaccinium vacillans Kalm. LATE LOW BLUEBERRY.

Dry woods and open situations; frequent.

Durham (L); Buckwampum Mountain (L); Finland (L); Rockhill (F); Dublin (L); Doylestown (C. G. Armstrong); Brownsburg (L); Rushland (L).

Vaccinium corymbosum L. HIGH BLUEBERRY.

Wet situations in woods and open places; frequent.

Buckwampum Mountain (R–R); Springtown (L); Rockhill (M) (F); Neshaminy (Mc); Lower Solebury (E. Newlin Williams); Roelofs (L); Yardley (L); Penn Valley (C); Emilie (B); Andalusia (L).

Vaccinium atrococcum (Gray) Heller.

Low woods, swamps and thickets; occasional.

Nockamixon (We); Pleasant Valley (B); Richlandtown (L); Spinnerstown (L); Lower Solebury (E. Newlin Williams); Morrisville (L); Tullytown (St); Bristol (B).

Vaccinium macrocarpon Ait. CRANBERRY.

(*Oxycoccus macrocarpon* of authors.)

Wet places; rare. Boggy meadows, Pleasant Valley (B); wet soil in gravel pits, Bristol (L).

PRIMULACEAE (PRIMROSE FAMILY)

Hottonia inflata Ell. FEATHERFOIL.

Shallow stagnant water; rare.

Shaded pond-hole, one and one-fourth miles east of Oxford Valley (L, July 1, 1931).

This is a plant having a widely scattered but little understood distribution. There are several stations for it in New Jersey but this is the only known station for it in Pennsylvania.

Samolus floribundus HBK. WATER PIMPERNEL.

Wet soil along streams; occasional.

Upper Black Eddy (Tr–P); Beaver Creek (B); Revere (L); Finland (B); Argus (F); Andalusia (L); (Ringing Rocks, Bridgeton Township); (Upper Black Eddy); (Quakertown).

***Lysimachia punctata** L.

Rare; along roadside, Rich Hill (B, July 2, 1915).

Lysimachia quadrifolia L. LOOSESTRIFE.

Thickets, wooded slopes and banks; common.

Kintnersville (Dr); Rockhill (M); Sellersville (F); Curley Hill (B); Doylestown (Me); Neshaminy (Mc); Buckingham (L); Oxford Valley (L).

Lysimachia producta (Gray) Fernald.

Moist open soil or thickets; rare.

Rockhill Station (F, July 20, 1882.)

Sometimes this plant is regarded as a fertile hybrid between *L. quadrifolia* and *L. terrestris*.

Lysimachia terrestris (L.) BSP.

Swamps, wet thickets and sandy shores; frequent.

Monroe (R–R); Upper Black Eddy (Tr–P); Rockhill (F); Argus (F); Doylestown (Me); Bristol (Dr); Croydon (Dr).

***Lysimachia Nummularia** L. MONEYWORT.

Moist places in woods, thickets, meadows and banks; becoming frequent.

Monroe (R–R); Sellersville (F); Telford (B); Point Pleasant (L); Doylestown (Me); Neshaminy (Mc); Oxford Valley (L).

Steironema ciliatum (L.) Raf. Fringed Loosestrife.

Low thickets and borders of swamps; frequent except on Coastal Plain where it is rare.

Monroe (R–R); Shelly (B); Rockhill (M); Argus (B); Sellersville (F); Ottsville (L); Point Pleasant (L); Doylestown (Me); Washington's Crossing (Dr); Newportville (L); Andalusia (L).

Steironema lanceolatum (Walt.) Gray.

Similar habitats as preceding; frequent including the Coastal Plain.

Quakertown (F); Rockhill (L); Point Pleasant (L); Morrisville (B); Penn Valley (C); Tullytown (M); Bristol (C).

Trientalis borealis Raf. Star Flower.

(*T. americana* of Gray's Manual, ed. 7.)

Rhodora, xi. 236 (1909).

Damp humus in woods and thickets; rare.

Nockamixon (C); Buckwampum Mountain (R–R); Argus (B); Penn Valley (C); (Forks of Neshaminy).

***Anagallis arvensis** L. Poor Man's Weatherglass. Scarlet Pimpernel.

Frequent in cultivated ground; an adventive which is scarcely persistent.

Monroe (R–R); Passer (B); Steinsburg (Wi); Perkasie (F); Telford (Sm); Chalfont (L); Lumberville (L); Doylestown (F); Neshaminy (Mc); Ivyland (Fi); Brownsburg (B); Roelofs (L).

EBENACEAE (ebony family)

Diospyros virginiana L. Persimmon.

Fields and woods; becoming scarce.

Wyker's Island (R–R); Pleasant Valley (Bn); Rockhill (F); Argus (F).

OLEACEAE (olive family)

Fraxinus americana L. White Ash.

Rich upland woods and fence rows; common except in lower end.

Narrowsville (L) (M); Sundale (L); Haycock Mountain (B); Spinnerstown (L); Argus (Br–P); Sellersville (F); Point

Pleasant (L); Buckmanville (L); Richboro (L); Woodbourne (L); Newportville (L).

Fraxinus biltmoreana Beadle.

Rich woods; rare and local.

Milford Square (L); Sellersville (F); Woodbourne (Bn).

Fraxinus pennsylvanica Michx. RED ASH.

Rich alluvial soils and sometimes on upland slopes; frequent.

Narrowsville (Bn); Ottsville (L); Argus (K); Sellersville (F); Pipersville (F); New Hope (Sg); Woodbourne (Bn).

Fraxinus pennsylvanica Marsh., var. **lanceolata** (Borkh.) Sarg.

Waste ground, Telford (B, May 18, 1914).

Perhaps introduced at this station.

Fraxinus nigra Marsh. BLACK ASH.

Swamp ground and borders of streams; locally abundant.

Beaver Creek (B); Ottsville (L); Buckwampum Mountain (L); Milford Square (L); Rockhill (V); Aquetong (L); Yardley (L); Bensalem Township, 1¾ miles southwest of Hulmeville (B); (Sellersville).

***Syringa vulgaris** L. LILAC.

Rarely spreading from cultivation.

Ottsville (L); Finland (L); Carversville (F).

***Forsythia viridissima** Lindl.

An escape, Croydon (K, May 23, 1897).

***Ligustrum vulgare** L. PRIVET.

Escaped from cultivation; infrequent.

Doylestown (Me); New Britain Township (Gr); Penns Park (L); Morrisville (L); Hulmeville (B).

GENTIANACEAE (GENTIAN FAMILY)

Sabatia angularis (L.) Pursh.

Rich open soil or thickets; occasional.

Durham (R–R); Upper Black Eddy (Tr–P); Sellersville (F); Newtown (Va–G); Yardley (Dr); Fallsington (L); Bristol (C).

Sabatia stellaris Pursh.

On the Coastal Plain; rare.

Tullytown (Bn, August 9, 1904).

Sabatia gracilis (Michx.) Salisb.

(*S campanulata* of authors.)

Rhodora, xviii. 145 (1916).

Open moist soil on the Coastal Plain; locally abundant.

Penn Valley (J); Tullytown (C) (Le) (Bn) (M); Bristol (D).

Gentiana crinita Froel. FRINGED GENTIAN.

Low ground in open woods, pastures and meadows; locally abundant in upper districts, rare or wanting elsewhere.

Revere (Lewis Sigafoos–R); Spinnerstown (L); Finland (L); Ridge Valley (B); Rockhill (C) (F) (K); Doylestown (Agnes Woodman–G); Buckingham Township (Me); Newtown (Ma–C, 1865).

Gentiana quinquefolia L.

Dry or moist slopes; rare.

Riegelsville (R); Monroe (R).

Gentiana Saponaria L. SOAPWORT GENTIAN.

Moist or wet soil in lower end; locally abundant.

Roelofs (L); Morrisville (L); Fallsington (L); Bristol (B).

A southern species chiefly of the Coastal Plain.

Gentiana clausa Raf.

(Rhodora, xix, 147 (1917).

Moist ground; rare.

Nockamixon (C, September 3, 1896).

In this species the corolla is closed and the calyx lobes are herbaceous and spreading. *G. Saponaria* has the calyx lobes firm, narrow and ascending and the corolla distinctly open.

Gentiana Andrewsii Griseb. CLOSED GENTIAN.

Damp thickets and low mostly sandy or gravelly open soil; frequent.

Ringing Rocks, Bridgetown Township (Pr); Revere (L); Quakertown (Pr) (B); Steinsburg (Wi); Rockhill (K) (C);

Argus (B); Sellersville (F); Doylestown (Me); Yardley (Me); Tullytown (J).

Gentiana flavida Gray.

Moist soil; very rare.

Durham (R–R), September 14, 1888).

On April 16, 1899, Dr. Thomas C. Porter wrote to Dr. C. D. Fretz to inform him that he had received a specimen of this plant from Mr. H. F. Ruth. He said, in part, "It is a great surprise to me, and is, no doubt, a recent immigrant from the Southwest, like Dr. Best's *Pinus pungens* Mx. in Hunterdon Co., N. J."

[Gentiana villosa L.

Reported from Buckingham Valley. This record is probably erroneously based on a specimen from Bucks Valley, Fulton Co. Pa.]

Bartonia virginica (L.) BSP.

Moist sandy soil of woods; occasional on Coastal Plain; rare elsewhere.

Ringing Rocks, below Nockamixon (R); Roelofs (L); Langhorne (B); Tullytown (F); Bristol (F) (B).

Bartonia paniculata (Michx.) Robinson.

Moist sandy soil, of Coastal Plain; rare and local.

Roelofs (L); Langhorne (B); Bristol (B).

Obolaria virginica L. PENNYWORT.

Rich woods and thickets of the Piedmont Plateau; rare and local.

Durham (R–R); Geryville (L); Spinnerstown (L); Milford Square (L); Finland (L); Argus (Bn); Doylestown (Me); Jericho Hill (L).

Menyanthes trifoliata L. BUCKBEAM.

Boggy meadow near Rockhill Station (C) (F) (Bn).

Nymphoides lacunosum (Vent.) Fernald. FLOATING HEART.

(*Limnanthemum lacunosum* of Fretz's Flora.)

Ponds and streams; rare.

Bristol (Ma, 1865) (Bo, July 11, 1871).

APOCYNACEAE (DOGBANE FAMILY)

***Vinca minor** L. PERIWINKLE.

Escaped from gardens; occasional.

Durham (R–R); Hartsville (L); Bristol (F); (New Hope).

Apocynun androsaemifolium L. SPREADING DOGBANE.

Dry fields, thickets and clearings; common.

Revere (Bn); Shelly (B); Perkasie (B); Sellersville (F); Telford (Sm); Deep Run (F); Point Pleasant (L); Neshaminy (Mc); Bristol (Dr).

Apocynun medium Greene.

Fields, slopes, thickets and open woods; infrequent.

Rocky Ridge (F); East Rockhill Township (F); Ridge Valley (F); Sellersville (F); Doylestown (Me); Glen Lake (Ba) (F).

A variable species which includes such forms as *A. Milleri* Britton and *A. urceolifer* Miller. These, however, do not display constant characters and are not recognized in this treatment as being distinct.

Apocynum cannabinum L. INDIAN HEMP.

Fields, thickets and sandy or gravelly places near streams; common.

Revere (L); Ottsville (L); Finland (L); Perkasie (B); Sellersville (F); Bristol (B); Andalusia (Bn).

The var. *pubescens* is to be looked for especially on the Coastal Plain. So far it has not been found within the County.

Apocynum cannabinum L., var. **hypericifolium** (Ait.) Gray.

(*A hypericifolium* of Fretz's Flora). (*A. sibiricum* Jacq.) (*A. album* Greene).

Dry soil; rare. Sellersville (F, July, 1880).

ASCLEPIADACEAE (MILKWEED FAMILY)

Asclepias tuberosa L. BUTTERFLY WEED. PLEURISY-ROOT.

Dry fields, roadsides and banks; frequent.

Revere (W); Ottsville (B); Hagersville (F); Almont (F); Sellersville (F); Deep Run (F); Solliday's Island (F); Doylestown (Me); (Buckingham).

Asclepias rubra L.

Wet soil; rare. Bristol (F, July 24, 1902).

Asclepias purpurascens L. PURPLE MILKWEED.

Dry fields and roadsides; apparently rare on Coastal Plain, common elsewhere.

Revere (L); Applebachsville (L); Rockhill Township (W); (F); Sellersville (F); Doylestown (Me); Neshaminy (Mc); Bycot (K); Buckmanville (L); Edgely (B).

Asclepias incarnata L. SWAMP MILKWEED.

Swamps and wet shores; frequent except in lower end.

Monroe (R–R); Upper Black Eddy (Tr–P); Rockhill (B); Sellersville (F); Doylestown (Be); Neshaminy (Me); Grenoble (L); Brownsburg (B).

Asclepias incarnata L., var. **pulchra** (Ehrh.) Pers.

Swamps and moist fields of the Coastal Plain; locally abundant.

Morrisville (L); Penn Valley (C); Tullytown (Dr); Emilie (Dr); Bristol (L); Andalusia (L).

Asclepias syriaca L. COMMON MILKWEED.

Fields, roadsides and waste places; common.

Monroe (R–R); Richlandtown (L); Sellersville (F); Argus (Bn); Doylestown (Me); Neshaminy (Mc); Buckmanville (L); Edgely (B).

Asclepias amplexicaulis Sm.

Dry sandy soil; rare.

Penn Valley (C, July 19, 1908); (Quakertown); (Tullytown); (Bristol).

Asclepias phytolaccoides Pursh. POKE MILKWEED.

(*A. exaltata* of Fretz's Flora.)

Thickets and woods; rare.

Monroe (R–R); New Britain (B); Doylestown (Me); (Kintnersville); (Springfield); (Sellersville); (Bycot); (New Hope).

Asclepias variegata L.

A southern species of dry woods and thickets; rare.

Bycot (J, June 16, 1895); (Solebury).

Asclepias quadrifolia Jacq.

Moist to dry soil of open woods and thickets; apparently absent on Coastal Plain, common elsewhere.

Revere (L); Uhlertown (Me); Ottsville (L); Haycock Mountain (B); Richlandtown (L); Milford Square (B); Finland (L); Rockhill (M) (Br); Rocky Ridge (W); Argus (L); Sellersville (F); Doylestown (Me); Aquetong (L).

Asclepias verticillata L. Whorled Milkweed.

Dry soil; rare.

Kintnersville (F, September, 1883).

Acerates viridiflora Ell. Green Milkweed.

Dry open soil; infrequent. Upper Black Eddy (Tr–P); Revere (L); Sellersville (F).

[**Acerates viridiflora** Ell., var. **lanceolata** (Ives) Gray.

(*A. viridiflora,* var *Ivesii* of Fretz's Flora.)

Reported from Sellersville. Material proves to be the typical species.]

CONVOLVULACEAE (morning glory family)

***Ipomoea Quamoclit** L. Cypress Vine.

An adventure from tropical America; rarely persisting.

Sellersville (F); Telford (B).

***Ipomoea coccinea** L.

A native of the southwest adventive in fields and waste ground; rare.

Sellersville (F); Telford (B).

***Ipomoea hederacea** Jacq. Ivy-leaved Morning Glory.

Fields and waste places; rarely introduced from tropical America.

Sellersville (F); Bristol (B).

***Ipomoea purpurea** (L.) Roth. Common Morning Glory.

Waste places and dumps; introduced from tropical America; persisting for a time.

Yardley (Me); Bristol (Dr).

Ipomoea pandurata (L.) Meyer. Wild Potato Vine. Man-of-the-Earth.

Dry fields, banks and roadsides; infrequent.

Monroe (R–R); Sellersville (F); Doylestown (Me); Buckingham (L); Bristol (Dr).

Convolvulus spithamaeus L.

Dry sandy or rocky fields and banks; occasional.

Quakertown (Bn); Rockhill (C); Sellersville (F); Ottsville (L); Langhorne (Bn); (Pipersville); (Pineville); (Glen Lake).

***Convolvulus japonicus** Thunb.

Dry roadsides and waste places; locally established.

Springfield Township (F); Rich Hill (Bl–G); Sellersville (F).

Convolvulus sepium L. Hedge Bindweed.

Gravelly fields, thickets, waste places and banks; frequent.

Sellersville (F); Telford (B); Neshaminy (Me); Bycot (Br–P); Washington's Crossing (Dr); Yardley (Me); Bristol (L).

***Convolvulus arvensis** L. Field Bindweed.

Naturalized in fields and waste places; locally common.

Rockhill (F); Doylestown (Me).

[Cuscuta Epilinum Weihe.

Reported from Plumstead but no material found. It is a native of Europe and is a parasite on cultivated flax.]

***Cuscuta pentagona** Engelm.

(*C. arvensis* of Gray's Manual, ed. 7. (Univ. of Ill. Biol. Monog. vi. nos. 3–3, p. 50 (1921).

Parasitic on various low plants; rare.

Pleasant Valley (B); Sellersville (F); Bristol (Dr); Eddington (B); (Kintnersville).

Cuscuta Gronovii Willd. Common Dodder.

Parasitic on herbs and low shrubs in moist shady places; the commonest of our local dodders.

Sellersville (F); Doylestown (Me); Brownsburg (L); Grenoble (L); Washington's Crossing (Me); Yardley (Me);

Morrisville (B); Emilie B); Andalusia (L).

A polymorphic species which upon further study may yield several recognizable varieties.

Cuscuta compacta Juss.

On shrubs in damp thickets, infrequent.

Monroe (R–R); Fallsington (L); Oxford Valley (B); Croydon (B); Andalusia (L); (Nockamixon).

POLEMONIACEAE (PHLOX FAMILY)

Phlox paniculata L. GARDEN PHLOX.

Woods and thickets; rare, probably an escape with us.

Buckingham (L, July 23, 1917); (Plumstead).

Phlox maculata L. WILD SWEET WILLIAM.

Moist woods and along streams; frequent.

Durham (R–R); Shelly (B); Quakertown (B); Finland (L); Spinnerstown L); Rockhill (M) (F); Sellersville (Henry Lang); Doylestown (Me); Bycot (J).

Phlox pilosa L. DOWNY PHLOX.

Dry or sandy woods, meadows and slopes; frequent.

Nockamixon (C) (H) (M); Pleasant Valley (B); Thatcher (E–P); Richlandtown (Me); Sellersville (F); Telford (B); Ottsville (L); Bedminster (B); (Hilltown).

Phlox subulata L. Moss PINK.

Dry rocky or sandy places, sometimes on cliff crests; locally abundant.

Monroe (R–R); Nockamixon (M) (Bn); Erwinna (L); Ottsville (L); Rock Hill (H–G); Point Pleasant (Me); Carversville (Gr); Doylestown (W); Buckingham (Va–G); (Bedminster); (Neshaminy).

Polemonium reptans L. GREEK VALERIAN.

Alluvial woods; known at a few places in the Neshimany drainage.

Edison (F, June 4, 1904); Lahaska (Va–G); Janney (L, April 27, 1929).

HYDROPHYLLACEAE (WATERLEAF FAMILY)

Hydrophyllum virginianum L. WATERLEAF.

Rich soil of woods and thickets; frequent in upper districts.

Monroe (R–R); Nockamixon (R–R); Uhlertown (Me); Pleasant Valley (B); Milford Square (Pr); Sellersville (F); Point Pleasant (Me); New Hope (Sg); Brownsburg (L).

Hydrophyllum canadense L.

In soil rich in humus in rather deep cool shade; rare.

Durham (B. Frank Fackenthall); Nockamixon (B. Frank Fackenthall) (P) (H); Kintnersville (V) (L).

Ellisia Nyctelea L.

Damp shady places along the Delaware River; rare.

Brownsburg (L) (Wi); Morrisville (A. C. Apgar).

***Phacelia hirsuta** Nutt.

(*P. dubia* of Fretz's Flora.)

Along railroad, Telford (F, May 10, 1901 and June 14, 1901).

BORAGINACEAE (BORAGE FAMILY)

[Heliotropium curassavicum L.

Reported from the County by Porter. No material seen. It is usually found as a ballast weed.]

[Heliotropium indicum L.

Another ballast weed reported from the County by Porter but no material was found.]

***Cynoglossum officinale** L. HOUND'S TONGUE.

Naturalized as a weed in pasture lands, thickets, fields and waste places; occasional.

Monroe (R–R); Quakertown (K); Rockhill (F) (M); Doylestown (Me); Center Bridge (Fi); (New Hope).

Cynoglossum virginianum L. WILD COMFREY.

Open woods and thickets; apparently only on Piedmont Plateau where it is frequent.

Haycock Mountain (L); Rockhill (F); Rocky Ridge (F); Argus (L); Bedminster (Kr); Center Bridge (Fi); Brownsburg (L); George School (Bn); Buckmanville (L).

Hackelia virginiana (L.) Johnston. STICKSEED.

(*Lappula virginiana* of Gray's Manual, ed. 7.) Cont. Gray Herb. N. S. lxviii, 43 (1923).

Rich soil in woods and thickets; frequent except on Coastal Plain.

Monroe (R–R); Upper Black Eddy (Tr–P); Rockhill (F); Point Pleasant (L); Doylestown (Me); Brownsburg (L); Penns Park (L); Hulmeville (B); (Neshaminy).

***Symphytum officinale** L. COMMON COMFREY.

A rare escape from gardens.

Upper Black Eddy (E, Sept. 14, 1913); (Sellersville).

[Myosotis scirpioides L.

(*M. palustris* of authors.)

Reported from Tullytown (J) but no material found to cover the record.]

Myosotis laxa Lehm. FORGET-ME-NOT.

Wet meadows; marshes, ditches and muddy shores; common.

Monroe (R–R); Upper Black Eddy (Tr–P); Pleasant Valley (B); Shelly (B); Milford Square (B); Rockhill (M); Sellersville (F); Telford (B); Doylestown (Me); Edison (L); Neshaminy (Mc); Aquetong (K); Tullytown (M); Andalusia (L).

Myosotis virginica (L.) BSP. SCORPION GRASS.

Dry hills, banks and open woods; frequent.

Perkasie (M); Telford (B); Doylestown (Me); Aquetong (Wi); Roelofs (L); Penn Valley (C).

Mertensia virginica (L.) Link. VIRGINIA COWSLIP.

Rich alluvial soil; rare but locally abundant.

Quakertown (L); George School (C. Buckman–G); Rushland (V & L); Neshaminy Falls (Fo); Janney (L); (Yardley).

***Lithospermum arvense** L. CORN GROMWELL.

An introduced weed of roadsides and fields; frequent.

Sellersville (F); Ottsville (L); Pipersville (L); Doylestown (Me).

[Onosmodium virginianum (L.) A. DC.

Reported from Point Pleasant but no material has been found.]

***Echium vulgare** L.

Fields, waste places and railroad banks; becoming frequent.

Monroe (R–R); Upper Black Eddy (Tr–P); Ferndale (B); Sundale (B); Sellersville (F); Point Pleasant (Bn).

VERBENACEAE (VERVAIN FAMILY)

Verbena urticaefolia L. WHITE VERVAIN.

Rather dry soil of waste places, roadsides and fields; common.

Narrowsville (L); Erwinna (L); Springtown (L); Shelly (B); Telford (B); Dublin (L); Edison (Bt); Neshaminy (Mc); Brownsburg (B); Penns Park (L).

Verbena angustifolia Michx.

Dry fields and waste places; rare and local.

East Rockhill Township (F), this probably covers the Three Mile Run record; Tullytown (Bn); (Pineville); (Wrightstown).

Verbena hastata L. BLUE VERVAIN.

Low ground especially in waste places; frequent.

Monroe (R–R); Rich Hill (L); Point Pleasant (F); Doylestown (Me); Grenoble (L); Morrisville (L); Tullytown (M); Emilie (L).

LABIATAE (MINT FAMILY)

Teucrium canadense L. AMERICAN GERMANDER.

Moist thickets, marshes and low meadows; common.

Buckwampum Mountain (L); Ottsville (L); Sellersville (F); Tohickon Park (Wi); Point Pleasant (L); Lumberville (B) (L); Yardley (Dr); Langhorne (L); Neshaminy Falls (M); Tullytown (M).

The Lumberville (L) specimen is a form having foliaceous bracts.

Isanthus brachiatus (L.) BSP. FALSE PENNYROYAL.

Sandy soil; rare.

Bursonville (R–R); Point Pleasant (L, November 11, 1931); (Malta Island); (Nockamixon); (New Hope).

Trichostema dichotomum L. BLUE CURLS.

Dry gravelly or sandy soil in fields, thickets and on banks; common.

Monroe (R–R); Beaver Creek (B); Passer (Wi); Telford (B); Doylestown (Me); Neshaminy (Mc); Bristol (Dr).

[Trichostema lineare Walt.

A species of the Atlantic coast region reported from Bristol (D) but no material was found.]

Soutellaria lateriflora L. MAD DOG SKULLCAP.

Marshes, swamps and wet shores; common.

Wyker's Island (R–R); Upper Black Eddy (Tr–P); Perkasie (B); Ridge Valley (F); Sellersville (F); Lumberville (L); Doylestown (Me); Neshaminy (Mc); Morrisville (B); Tullytown (M); Bristol (B); Croydon (L).

Scutellaria pilosa Michx.

Dry woods and thickets; frequent.

Monroe (R–R); Springtown (L); Rockhill (F); Rocky Ridge (W); Argus (B); Sellersville (F); Doylestown (Me); Bycot (J); Feasterville (B).

Scutellaria epilobiifolia Hamil. HOODED SKULLCAP.

(*S. galericulata* of Gray's Manual, ed. 7) Rhodora, xxiii. 85 (1921).

Marsh, Tullytown (Dr, August 7, 1925); (Andalusia).

Scutellaria integrifolia L.

Thickets, woods and fields mostly in moist soil; frequent.

Monroe (R–R); Upper Black Eddy (Tr–P); Steinsburg (Wi); Finland (L); Rockhill (F); Telford (Sm); Doylestown (Me); Bycot (K); Neshaminy (Mc); Tullytown (B); Croydon (Dr).

Scutellaria parvula Mich., var. **ambigua** (Nutt.) Fernald.

(*S. parvula* of Fretz's Flora.)

Dry to moist sandy soil; rare.

Nockamixon (F); Ottsville (L); (Sellersville).

Scutellaria nervosa Pursh.

Moist woods and thickets; absent on Coastal Plain; occasional elsewhere.

Ottsville (L); Milford Square (L); Quakertown (Bn); Rockhill (F); Argus (Sm); Telford (B); (Nockamixon).

***Marrubium vulgare** L. HOREHOUND.

Naturalized as a weed in waste places; rare.

Telford (B); Doylestown (Me).

Agastache nepetoides (L.) Ktze. GIANT HYSSOP.

Woods and thickets; infrequent.

Narrowsville (K); Ottsville (L); Sellersville (F); Danboro (B); Lumberville (Me); Aquetong (L).

Agastache scrophulariaefolia (Willd.) Ktze. GIANT HYSSOP.

Borders of woods, thickets and slopes; infrequent.

Monroe (R–R); Pleasant Valley (B); Sellersville (F).

This and the preceding species are plants of the Mississippi Basin and are apparently absent from the Coastal Plain within the County.

***Nepeta Cataria** L. CATNIP.

A naturalized weed; common in waste places.

Monroe (R–R); Sellersville (F); Ottsville (B); Point Pleasant (B); Doylestown (Me); Edison (Fo).

***Nepeta hederacea** (L.) Trev. GROUND IVY. GILL-OVER-THE-GROUND.

(*Glecoma hederacea* of Fretz's Flora.)

Damp rich soil in thickets, shaded roadsides and waste places; common.

Kintnersville (R–R); Springtown (We); Milford Square (L); Argus (B); Sellersville (F); Erwinna (I); Doylestown (Me); Grenoble (L); Tullytown (B); Croydon (K).

Prunella vulgaris L. HEAL-ALL.

Open woods, fields, roadsides and waste places; common.

Monroe (R–R); Ottsville (B); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (L); Wrightstown (B); Feasterville (B); Bristol (B).

A white flowered form from Oxford Valley (B) in forma *albiflora* (Bogenhard) Britton.

Prunella vulgaris L., var. **lanceolata** (Bart.) Fernald.

Rhodora, xv. 183 (1913).

Similar situations; rare. Upper Black Eddy (Fo).

***Physostegia virginiana** (L.) Benth. False Dragon Head.

Ballast, Telford (B, August 20, 1915).

***Lamium amplexicaule** L. Henbit.

A naturalized weed in cultivated and waste ground; frequent.

Monroe (R–R); Telford (B); Pipersville (L); Doylestown (Me); Neshaminy (Mc); Tullytown (St).

***Lamium album** L.

Weed about door yard, Doylestown (Me, 1879).

***Lamium maculatum** L. Spotted Dead Nettle.

An escape from gardens; occasional.

Nockamixon (F); Ingham Spring (Hilda Kaji).

***Leonurus Cardiaca** L. Motherwort.

Naturalized in waste places; a common weed.

Monroe (R–R); Telford (B); Tohickon Park (F); Dublin (L); Erwinna (Me); Doylestown (Me); Andalusia (L).

Stachys hyssopifolia Michx.

Wet open ground; rare. Bristol (Ma, 1865) (D, August 19, 1866).

Bucks County is credited with *S. atlantica* by Porter. No material forming the basis of this record was found. However, this is considered only a race of *S. hyssopifolia* for it is characterized chiefly by its somewhat wider leaves.

Stachys hyssopifolia Michx., var. **ambigua** (Gray) Britton.

Similar situations; rare.

Bristol (Ma, 1865) (C, August 20, 1908).

[**Stachys tenuifolia** Willd.

Reported from Bristol by Porter but no material seen.]

Stachys tenuifolia Willd., var. **aspera** (Michx.) Fernald.

(*S. aspera* of Fretz's Flora.)

Borders of marshes and damp thickets; frequent.

Narrowsville (L); Sellersville (F); Almont (F); Tohickon Park (Wi); Lower Black Eddy (L); Bristol (Dr).

Stachys palustris L. Woundwort.

Edge of fields, along thickets, Telford (M, July 4, 1922).

Salvia lyrata L. Lyre-leaved Sage.

Dry sandy woods and thickets; rare.

Doylestown (F, 1880 and 1889).

***Salvia verticillata** L.

Naturalized in waste ground, Sellersville (W. Reiff Nauman, July 26, 1913).

Monarda didyma L. Oswego Tea. Bee Balm.

Damp woods, thickets and along streams; occasional.

Finland (Mu); Revere (W); Point Pleasant (F); Feasterville (B).

Monarda clinopodia L. Basil Balm.

Damp woods and thickets; rare.

Sundale (B); Deep Run (F).

A plant common west of the Allegheny Mountains in the Ohio River drainage.

Monarda fistulosa L. Wild Bergamot.

Dry hills, thickets and gravelly banks; rare.

Monroe (R–R); Sellersville (F, August, 1880).

Monarda fistulosa L., var. **rubra** Gray.

(*M. media* Willd.)

Rare, probably a garden escape.

Doylestown (F, July 20, 1899).

Monarda mollis L.

Dry fields, hillsides, thickets and open woods; occasional.

Argus (F); Sellersville (F); Buckingham (L); Penn Valley (C); Bristol (C).

[Monarda punctata L.

This plant is reported from Solebury Township and Bristol but no material was found. This is a plant to be looked for on the Coastal Plain.]

Hedeoma pulegioides (L.) Pers. AMERICA PENNYROYAL.

Dry sandy or stony soil in fields, open woods and banks; common.

Monroe (R–R); Upper Black Eddy (Fo); Pleasant Valley (B); Telford (B); Doylestown (Me); Neshaminy (Mc); Woodbourne (L); Feasterville (B).

***Melissa officinalis** L. BALM.

Naturalized in various situations; rare.

Durahm (R–R); Bycot (K); (Haycock Mountain).

Satureja vulgaris (L.) Fritsch. BASIL.

(*Clinopodium vulgare* of Fretz's Flora.)

Fields, woods and thickets, preferably in damp soil; frequent.

Nockamixon (B); Ottsville (B); Telford (Sm); Doylestown (Me); Brownsburg (L); Penns Manor (B); Feasterville (B).

***Hyssopus officinalis** L. HYSSOP.

Naturalized along street, South Perkasie (F, August, 1881).

[Origanum vulgare L.

Reported from lower end of County by Martindale but no material was found.]

Pycnanthemum clinopodioides T. & G.

(*Koellia clinopodioides* of Fretz's Flora.)

A single specimen, Point Pleasant (F, July 3, 1899).

It is distinguished by its loose flower clusters and by its spreading bracts. The species is closely related to *P. verticillatum*.

Pycnanthemum flexuosum (Walt.) BSP. MOUNTAIN MINT.

(*Koellia flexuosa* of authors.)

Dry open soil and thickets; common except on Coastal Plain where it is rare or absent.

Monroe (R–R); Upper Black Eddy (Tr–P); Kellers Church (B); Finland (B); Rockhill Station (B); Almont (B); Tel-

ford (Sm); Dublin (L); Plumstead (Dr); Doylestown (Me); Neshaminy (Mc); Jamison (B); Woodbourne (L); Bristol (C. F. Parker).

Pycnanthemum virginianum (L.) Durand & Jackson.

(*Koellia virginiana* of authors.)

Dry fields, pastures and thickets; common.

Upper Black Eddy (Tr–P); Haycock Run (B); Quakertown (F); Shelly (B); Finland (B); Rockhill Station (B); Doylestown (Me); Neshaminy (Mc); Grenoble (L); Yardley (Dr) (Me); Morrisville (B).

Pycnanthemum verticillatum (Michx.) Pers.

(*Koellia verticillata* of Fretz's Flora.)

Moist or dry fields, thickets and open woods; infrequent.

Haycock Mountain (Tr–P); Passer (Wi); Carversville (C); Neshaminy Falls (B); Tullytown (F); Bristol (F).

Pycnanthemum incanum (L.) Michx. Hoary Mountain Mint.

(*Koellia incana* of Fretz's Flora.)

Dry soil in fields, hillsides and open woods; occasional.

Nockamixon (M) (J); Narrowsville (L); Haycock Mountain (B); Sellersville (F); Point Pleasant (F); Carversville (L); Doylestown (Me).

Pycnanthemum muticum (Michx.) Pers.

(*Koellia mutica* of Fretz's Flora.)

Dry to damp sterile soil; occasional.

Quakertown (F); Rockhill (F); Tullytown (C).

***Thymus serpyllum** L. Thyme.

A garden escape; occasional.

Durham (R–R); Quakertown (F–G); Doylestown (Me).

Cunila origanoides (L.) Britton. Dittany.

Rocky woods in upper districts; locally very abundant but now becoming scarce in many places because it is so persistently hunted for its reputed medicinal qualities.

Nockamixon (J); Ottsville (B); Finland (L); Lumberville (B) (Me).

Lycopus virginicus L. Bugle Weed.

Wet soil in open situations and woods; frequent.

Monroe (R–R); Doylestown (Me); Neshaminy (Mc); Washington's Crossing (Me); Roelofs (L); Tullytown (L); Bristol (L) (B).

Lycopus uniflorus Michx. Bugle Weed.

Bogs, marshes and grassy shores; common.

Upper Black Eddy (Tr–P); Ottsville (B); Finland (L); Sellersville (F); Roelofs (L); Tullytown (L); Bristol (L).

[**Lycopus europaeus** L.

Reported from the County but no material was found.]

Lycopus americanus Muhl. Water Horehound.

Bogs, marshes and shores of ponds and streams; common.

Monroe (R–R); Pleasant Valley (B); Shelly (B); Finland (L); Sellersville (F); Telford (B); Point Pleasant (L); Aquetong (L); Neshaminy (Mc); Brownsburg (L); Yardley (Dr); Morrisville (B) (L); Tullytown (M); Bristol (B) (L).

A hairy form occurs on the Coastal Plain. This may deserve varietal rank although it has never been described as such.

[**Mentha longifolia** (L.) Huds.

An introduced weed reported from the County but no material was found.]

***Mentha alopecuroides** Hull. Woolly Mint.

Naturalized as a weed; common in most districts.

Haycock Mountain (B); Pleasant Valley (B); Passer (Wi); Sellersville (F); Hilltown (F); Plumsteadville (Mo); Doylestown (Me); Lower Solebury (Ws).

***Mentha rotundifolia** (L.) Huds.

Rarely naturalized or adventive.

Center Bridge (F, August, 1867); (New Hope).

***Mentha spicata** L. Spearmint.

Naturalized in various situations; frequent.

Monroe (R–R); Upper Black Eddy (Tr–P); Ottsville (B); Almont (F); Telford (B); Doylestown (Me); Oxford Valley (B).

***Mentha piperita** L. PEPPERMINT.

Naturalized in wet soil; frequent.

Monroe (R–R); Upper Black Eddy (Tr–P); Shelly (B); Sellersville (F); Doylestown (Me); Almont (F).

***Mentha aquatica** L.

Meadow, Sellersville (F, August 20, 1883).

***Mentha Cardiaca** Gerarde.

Naturalized in wet places; occasional.

Durham Furnace (R–R); Sellersville (F); Point Pleasant (F); New Hope (F).

***Mentha gentilis** L.

Naturalized in various situations; rare.

Sellersville (F, August 16, 1914); (Hilltown).

The Morrisville record for *M. sativa* may refer to this or to the preceding species.

Mentha arvensis L.

Naturalized in dry or damp situations; occasional.

Sellersville (F); Telford (B); Point Pleasant (F); Doylestown (Me); Grenoble (L); Brownsburg (L); Penn Valley (F).

Mentha arvensis L., var. **canadensis** (L.) Briquet.

Similar situations as preceding; occasional.

Monroe (R–R); Beaver Creek (B); Sellersville (F); Penn Valley (B); Tullytown (L).

Collinsonia canadensis L. HORSE BALM. STONE ROOT.

Moist rich woods of the Piedmont Plateau; locally abundant.

Monroe (R–R); Steinsburg (Wi); Finland (L); Rockhill (F); Point Pleasant (L); Doylestown (Me).

***Perilla frutescens** (L.) Britton.

Waste places, a garden escape; rare.

Nockamixon (R) (F); Brownsburg (K).

SOLANACEAE (NIGHTSHADE FAMILY)

***Solanum Dulcamara** L. EUROPEAN BITTERSWEET.

Naturalized in waste places, moist thickets and woods; frequent.

Narrows (L); Quakertown (F); Point Pleasant (L); Lumberville (Dr); Doylestown (Me); Buckmanville (L); Morrisville (B); Bristol (Bo).

Solanum nigrum L. COMMON NIGHTSHADE.

Waste places, cultivated ground, thickets and woods; occasional.

Haycock Mountain (Mc); Sellersville (F); Doylestown (Me); Brownsburg (L); Washington's Crossing (L).

***Solanum carolinense** L. HORSE NETTLE.

Fields and waste places; becoming common.

South Perkasie (F); Telford (Sm); Point Pleasant (B); Doylestown (Me); Neshaminy (Mc); Bristol (F).

***Solanum rostratum** Dunal. BUFFALO BUR.

Waste ground, Sellersville (F, August 6, 1922); (Perkasie).

[**Physalis pruinosa** L.

Reported from Sellersville (F) but material forming the basis for this record has been re-identified as *P. heterophylla.*]

Physalis hetehophylla Nees. GROUND CHERRY.

Cultivated ground, or sandy or gravelly waste places; occasional.

Uhlertown (Me); Sellersville (F) (B); Pipersville (L).

The var. *ambigua* is reported by Fretz but no material coming under this variety has been found.

Physalis subglabrata Mackenzie & Bush.

A weed in gravelly fields, thickets and waste places; occasional.

Quakertown (B); Sellersville (F); Telford (B); Edison (Bt); Wycombe (F).

Physalis virginiana Mill.

Open soil, Sellersville (M, October 10, 1899).

[**Nicandra Physalodes** (L.) Pers.

(*Physalodes physalodes* of Fretz's Flora.)

Reported from the lower districts but no material was found.]

***Lycium halimifolium** Mill. MATRIMONY VINE.

(*L. vulgare* of authors.)

Established in thickets and waste places; rare.

Penn Valley (Dr); Bristol (F).

[Hyoscyamus niger L. HENBANE.

Reported from Sellersville but no material was found.]

***Datura Stramonium** L. JIMSON WEED.

(Includes *D. Tatula* L.)

Naturalized in fields and waste places; frequent.

Monroe (R–R); Sellersville (F); Doylestown (Me); New Hope (F).

***Lycopersicon esculentum** Mill. TOMATO.

Spontaneous in waste ground; scarcely persistent, Bristol (B, September 6, 1927).

[Petunia axillaris (Lam.) BSP.

Reported from Sellersville. No material seen.]

SCROPHULARIACEAE (FIGWORT FAMILY)

***Verbascum Thapsus** L. COMMON MULLEIN.

Fields and waste places; a common weed.

Monroe (R–R); Telford (B); Doylestown (Me); Aquetong (L); Neshaminy (Mc).

***Verbascum phlomoides** L.

Similar situations as preceding; rare.

Sellersville (F, August, 1882).

***Verbascum Blattaria** L. MOTH MULLEIN.

Fields and waste places; frequent.

Nockamixon (R–R); Sellersville (F); Point Pleasant (L); Doylestown (Me); Aquetong (L); Neshaminy (Mc); Bristol (Dr).

***Verbascum Lychnitis** L. WHITE MULLEIN.

A weed of fields and waste places; rare and local in the Delaware Valley.

Reigelsville (L); Durham Furnace (F); Point Pleasant (F); (New Hope); (Malta Island); (Newtown).

Linaria vulgaris Hill. BUTTER AND EGGS.

(*L. Linaria* of Fretz's Flora.)

A weed in waste places and fields; common.

Nockamixon (Hb–P); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc); Washington's Crossing (Me); Yardley (Me); Bristol (Dr).

Linaria canadensis (L.) Dumort.

Dry or sandy soil in the lower districts; occasional.

Durham (R–R); Lahaska (L); Turkey Hill (L); Penn Valley (C); Bristol (L).

***Linaria dalmatica** Mill.

Established along railroad near Doylestown (B, June 12, 1921).

***Kickxia elatine** (L.) Dumort.

(*Linaria Elatine* of authors.)

Adventive or naturalized in fields, waste places and on ballast; occasional.

Narrowsville (Bn); Point Pleasant (Bn); Tohickon Park (F); Sellersville (F); Chalfont (L); Doylestown (Me); (Quakertown); (Rushland); (Pleasantville-Eureka).

***Cymbalaria muralis** Gaertn. KENILWORTH IVY.

(*Linaria Cymbalaria* of Gray's Manual, ed. 7. *C. Cymbalaria* of Fretz's Flora.)

Roadsides, waste places, stone walls and lawns; an occasional garden escape.

Monroe (L); Sellersville (B); Point Pleasant (Bn); Churchville (B); (Carversville); (Buckingham); (New Hope); (Wrightstown).

***Chaenorrhinum minus** (L.) Lange.

(*Linaria minor* of Gray's Manual, ed. 7.)

Along railroad bank, Traymore (George Redles, August 28, 1920).

Scrophularia marilandica L. FIGWORT.

Moist open woods, thickets and banks; frequent except on Coastal Plain where it is found occasionally.

Riegelsville (We); Nockamixon (F); Morrisville (B).

Scrophularia lanceolata Pursh.

(*S. leporella* of Gray's Manual, ed. 7.) Torreya xxii, 81 (1922).

Woods, thickets and roadsides in rather dry and sterile situations; frequent including the Coastal Plain.

Uhlertown (Me); South Perkasie (F); Sellersville (F); Hilltown (F); Deep Run (F); Ottsville (L); Pipersville (L); Doylestown (Me); Washington's Crossing (Me); Bristol (Dr); Andalusia (L).

Penstemon* hirsutus (L.) Willd. BEARD TONGUE.

Dry fields in stony or sandy soil; frequent except on Coastal Plain.

Narrowsville (Bn); Wormansville (L); Ottsville (Fo); Telford (B); Plumsteadville (H. W. Trudell); Carversville (L); Doylestown (Me); Neshaminy (Mc).

[**Penstemon laevigatus** Ait.

(*P. Penstemon* of Fretz's Flora.)

This species occurs in this latitude only as a very rare introduction from the South Atlantic States. The records in Fretz's Flora were based on misidentified material.]

Penstemon Digitalis Nutt. BEARD TONGUE.

(*P. laevigatus,* var. *Digitalis* of Gray's Manual, ed. 7.)

Fields and meadows; common.

Nockamixon (Fo); Shelly (F); Trumbauersville (F); Rockhill (J); Rocky Ridge (Wi); Perkasie (F); Sellersville (F); Blooming Glen (B); Point Pleasant (L); Doylestown (F); Buckingham Valley (Ws); Newtown (Dr); Southampton (L); Bristol (Dr); Andalusia (L).

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*Instead of Pentstemon as it generally spelled. For authority for this spelling, see Pennell, Contr. U. S. Nat. Herb. XX, 325 (1920).

Penstemon pallidus Small.

Small, Fl. S. E. U. S., 1069 (1903).

Sandy or barren soil, a rare introduction from the Mississippi Valley.

Aquetong (K, May 30, 1910).

Distinguished by its puberulent stem, its ovate to triangular calyx lobes and capsule which is 5–6 mm. long.

Chelone glabra L. Turtlehead.

Rich wet soil along streams and ponds, also in swamps and thickets; common.

Nockamixon (M); Haycock Mt. (B); Pleasant Valley (B); Steinsburg (Wi); Finland (L); Argus (K); Sellersville (F); Doylestown (Me); Aquetong (L); Yardley (Me); Emilie (Dr); Andalusia (L).

Mimulus ringens L. Monkey Flower.

Moist rich soil in open situations; common.

Monroe (R–R); Upper Black Eddy (Tr–P); Steinsburg (Wi); Finland (B); Rockhill (F); Argus (F); Point Pleasant (L); Doylestown (Me); Neshaminy (Mc); Brownsburg (L); Washington's Crossing (Dr); Penn Valley (B); Tullytown (M); Bristol (Dr).

Mimulus alatus Ait.

Marshy or swampy ground; infrequent.

Finland (B); Rockhill (F); Doylestown (Me); Tullytown (L); Andalusia (L); (Soleburg Township).

Limosella subulata Ives. Mudwort.

(*L. aquatica,* var. *tenuifolia* of Gray's Manual, ed. 7. *L. tenuifolia* of Fretz's Flora.) Rhodora, xx. 160 (1918) and Torreya, xix. 30 (1919).

Tidal mud and about borders of ponds; rare.

Andalusia (Me, 1866) (W, August, 1898) (L, October 23, 1917).

Hemianthus micranthus (Pursh) Eaton.

(*Micranthemum micranthemoides* (Nutt.) Wettst. of Gray's Manual, ed. 7.)

On river shore, between high and low tides; rare.

Tullytown (L); Eddington (L) (B).

Ilysanthes dubia (L.) Barnh. False Pimpernel.

Swales and muddy shores; frequent.

Monroe (R–R); Sellersville (F); Point Pleasant (L); Doylestown (Me); Washington's Crossing (Me); Morrisville (B); Bristol (Dr); Andalusia (L).

Characterized by the narrow sharp cut serrate leaves and open flowers.

Ilysanthes dubia (L.) Barnh., var. **inundata** Pennell.

Tidal mud flats along the Delaware River; local.

Tullytown (L); Bristol (B) (Dr); Andalusia (L).

Characterized by the rounder, nearly entire leaves and cleistogamous flowers.

Ilysanthes inaequalis (Walt.) Pennell.

(*I. anagallidea,* in part, of Gray's Manual, ed. 7.) Torreya, xix. 140 (1919).

Wet ditches, swales and muddy shores; infrequent.

Point Pleasant (L); Oxford Valley (B); Bristol (L) (C).

Gratiola neglecta Torr.

(*G. virginiana* of Fretz's Flora. Not L.) Rhodora, xx. 65 (1918).

Muddy shores and ditches; frequent.

Riegelsville (L); Nockamixon (R–R); Rockhill (L); Sellersville (F); Point Pleasant (L); Doylestown (Me); Edison (L); Neshaminy (Mc); Bycot (Br); Washington's Crossing (Me); Penns Manor (L); Morrisville (L); Oxford Valley (B); Bristol (L).

What is now regarded as real *G. virginiana* L. is a Coastal Plain plant occurring from New Jersey southward. It has not been found in Bucks County.

Gratiola aurea Muhl.

Wet sandy shores, chiefly on the Coastal Plain; frequent.

Wykers Island (R–R); Point Pleasant (L); Yardley (L); Tullytown (L) (Dr); Bristol (Bl) (M); Andalusia (L); (Neshaminy).

Veronicastrum virginicum (L.) Farwell. CULVER'S ROOT.

(*Veronica virginica* of Gray's Manual, ed. 7. *Leptandra virginica* of Fretz's Flora.)

Sandy or loam soil in moist meadows and pastures; frequent above the fall-line.

Finland (B); Rockhill (F); Almont (B); Plumsteadville (Dr); Point Pleasant (B); Doylestown (Me).

Veronica anagallis-aquatica L. WATER SPEEDWELL.

Ditches, brooks, pools and swamps; occasional.

Kintnersville (Dr); Lumberville (L); Brownsburg (L); New Hope (Wi); (Sellersville—material is *V. glandifera*).

Distinguished by its glabrous inflorescence, and petioled leaves.

Veronica glandifera Pennell.

(*V. anagallis-aquatica* of Gray's Manual, ed. 7, in part.) Torreya, xix. 170 (1919).

Ditches and wet shores; rare.

Rockhill (M); Sellersville (F).

Distinguished by the inflorescence which is covered with gland-tipped hairs and by its more serrate leaves which are all obviously clasping.

Veronica americana Schwein. AMERICAN BROOKLIME.

Ditches, brooks and swamps; occasional on the Piedmont Plateau.

Rockhill (F); New Hope (Wi).

***Veronica Chamaedrys** L. BIRD'S EYE.

A European introduction; rare.

North bank of Swamp Road, one-fourth mile west of Newtown (Annie C. Scarborough, May 26, 1931).

Also reported from near Doylestown by J. Kirk Leatherman, Esq., but not represented in any herbarium.

Veronica scutellata L. MARSH SPEEDWELL.

Swamps, marshes and brooks; occasional.

Upper Black Eddy (Tr–P); Revere (W); Rockhill (F) (M) (W); Tohickon Park (Wi); Buckingham (Dr); Tullytown

(V); Emilie (L); (Haycock Mountain); (Quakertown); (Hulmeville).

Veronica officinalis L. COMMON SPEEDWELL.

Fields, banks, pastures and open woods; common.

Buckwampum Mountain (L); Milford Square (L); Sellersville (F); Blooming Glen (L); Tohickon Park (F); Doylestown (Me); Neshaminy (Mc); Lahaska (L); Buckingham (L); Newtown (Dr); Brownsburg (L).

Veronica serpyllifolia L. THYME-LEAVED SPEEDWELL.

Fields, thickets and waste places; common.

Nockamixon (B); Milford Square (L); Sellersville (F); Doylestown (Me); Neshaminy (Mc); Yardley (L).

Veronica peregrina L.

Waste and cultivated ground; common.

Nockamixon (M); Upper Black Eddy (Pr); Quakertown (L); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc); Trevose (Dr); Andalusia (L).

Veronica peregrina L., var. **xalapensis** (HBK.) Pennell.

Torreya, xix. 167 (1919) and Rhodora, xxiii. 19 (1921).

Adventive from western United States and southward; cultivated ground and waste places; infrequent.

Ottsville (B); Rockhill (M); Tullytown (M).

This plant differs from the species by having a glandular-puberulent stem, whereas the stem of the typical form is glabrous or essentially so.

***Veronica arvensis** L. CORN SPEEDWELL.

Fields and waste places; a common weed.

Durham Furnace (L); Upper Black Eddy (Pr); Buckwampum Mountain (L); Sellersville (F); Ottsville (L); Pipersville (L); Doylestown (Me); Neshaminy (L); Ingham Springs (Bt).

***Veronica polita** Fries.

(*V. agrestis* of Fretz's Flora.)

Fields, Narrowsville (Pr. April 2, 1916); (Bensalem).

***Veronica persica** Poir.

(*V. Tournefortii* of Gray's Manual, ed. 7. *V. byzantina* of Fretz's Flora.) Rhodora, xxi. 101 (1919).

Cultivated ground, Telford (B, April 30, 1916); (Andalusia).

Aureolaria pedicularia** (L.) Raf. False Foxglove.

(*Gerardia pedicularia* of Gray's Manual, ed. 7. *Dasystoma pedicularia* of Fretz's Flora.)

Dry woods and thickets; occasional above the fall-line.

Monroe (R–R); Argus (F); Furlong (L).

Aureolaria flava (L.) Farwell. Downy False Foxglove.

(*Gerardia flava* of Gray's Manual, ed. 7. *Dasystoma flava* of Fretz's Flora.)

Dry to moist open woods and thickets; occasional in upper districts.

Durham (R–R); Haycock Mountain (Tr–P); Argus (F); Doylestown (Me).

Aureolaria virginica (L.) Pennell. Smooth False Foxglove.

(*Gerardia virginica* of Gray's Manual, ed. 7. *Dasystoma virginica* of Fretz's Flora.)

Dry open woods usually in sandy soil; frequent.

Springtown (F); Argus (F)(B); Doylestown (Me); Buckingham (L); Brownsburg (L); (Tullytown).

Agalinis purpurea L. Purple Gerardia.

(*Gerardia purpurea* of Gray's Manual, ed. 7.)

Moist mostly sandy soil; common on the Coastal Plain, rare or absent elsewhere.

Roelofs (L); Yardley (Me); Morrisville (D); Penn Valley (B); Tullytown (F)(C); Bristol (F); Andalusia (L).

[Agalinis paupercula (Gray) Britton.

(*Gerardia paupercula* of Gray's Manual, ed. 7.)

Reported from Tullytown but material has been reidentified as *A. purpurea.* This species is common northward in New York and New England.]

** For a discussion of the status of Aureolaria and Agalinis as generic names and the status of the old genus Gerardia see Rhodora, xx. 66 and 133 (1918) and Torreya, xix. 205 (1919).

Agalinis tenuifolia (Vahl.) Raf.

(*Gerardia tenuifolia* of Gray's Manual, ed. 7.)

Dry loam or sandy soil of open woods and thickets; common on the Piedmont Plateau, infrequent on the Coastal Plain.

Monroe (R–R); Ottsville (Wi); Finland (L); Perkasie (Pr); Telford (B); Doylestown (Me); Bristol (F).

Tomanthera auriculata (Michx.) Raf.

(*Gerardia auriculata* of Gray's Manual, ed. 7.)

Old fields, occasional; probably an introduction from the Mississippi Valley.

Revere (R–R); Leidytown (F); Plumstead (Mo); Rushland (George Redles); (Rockhill).

Buchnera americana L. Blue Hearts.

Collected on a dry roadside bank, on hill above Upper Black Eddy by Dr. Rodney H. True, on August 3, 1925. The specimen is in the Herbarium of the University of Pennsylvania.

Castilleja coccinea (L.) Spreng. Scarlet Painted Cup.

Low moist ground in meadows; pastures and thickets; apparently absent on Coastal Plain, frequent elsewhere.

Nockamixon (H); Revere (L); Pleasant Valley (Bn); Spinnerstown (L); Finland (L); Rockhill (F)(M); Argus (C)(Bn); Fountainville (Gr); Doylestown (Me); (Sellersville); (Bonair).

Melampyrum lineare Lam. Cow Wheat.

Open woods often in sandy soil; occasional.

Monroe (R–R); Weisel (B); Rockhill (F).

Melampyrum lineare Lam., var. **latifolium** (Muhl.) Beauv.

Torreya, xix. 238 (1919).

Similar situations; common.

Argus (Sm); Doylestown (Me); Lahaska (L); Roelofs (L).

Distinguished by its comparatively broad leaves, its bracts which are very slightly or not at all fimbriate at base and its large seeds, 3 mm. long.

Pedicularis canadensis L. LOUSEWORT. WOOD BETONY.

Dry or moist thickets; woods and banks; frequent.

Monroe (R–R); Spinnerstown (B); Rockhill (M); Argus (C); Sellersville (F); Telford (Sm); Doylestown (Me); Aquetong (K); Tullytown (M).

Pedicularis lanceolata Michx.

Swamps and marshes; rare.

Yardley (L): Turkey Hill (C); (Tullytown).

LENTIBULARIACEAE (BLADDERWORT FAMILY)

Utricularia inflata Walt.

Coastal Plain ponds; rare.

Bristol (Dr, June 28, 1924).

Distinguished by its 5–12 flowered racemes and corollas about 2 cm. broad.

Utricularia radiata Small.

See Small, Fl. S. E. U. S. 1090 (1903).

Ponds, Bristol (Ma, 1865) (C. F. Parker, August 11, 1865) (L, July 8, 1927).

Distinguished by its 1–3 flowered racemes and corollas about 1.5 cm. wide.

Utricularia vulgaris L., var. **americana** Gray. GREAT BLADDERWORT.

Floating in stagnant ponds and slow streams; frequent especially in lower districts.

Monroe (R–R); Turkey Hill (L); Penn Valley (C); Oxford Valley (L); Tullytown (F); Emilie (B); Andalusia (L); (Bristol).

Utricularia gibba L.

Shallow water on the Coastal Plain; rare.

Tullytown (V); Bristol (C. F. Parker).

Utricularia fibrosa Walt.

Shallow water; rare.

Tullytown (C, August 6, 1896).

Utricularia intermedia Hayne.

Shallow water; rare.

Penn Valley (F, May 30, 1899) (C, June 1, 1899).

OROBANCHACEAE (BROOM-RAPE FAMILY)

Epifagus virginiana (L.) Bart. BEECHDROPS.

(*Leptamnium virginianum* of Fretz's Flora.)

Parasitic on roots of beech trees; frequent.

Monroe (R–R); Beaver Creek (B); Springtown (We); Steinsburg (Wi); Rockhill (F); Argus (B) (K); Doylestown (Me); New Britain Township (Gr); Feasterville (B); Oxford Valley (L); Andalusia (L).

Conopholis americana (L. f.) Wallr. SQUAW ROOT.

Rich woods, at or near the base of oak trees; rare.

Quakertown (Bn); Rockhill (F); Doylestown (Me); (Argus); (Southampton).

Orobanche uniflora L. BROOM-RAPE. CANCER ROOT.

(*Thalesia uniflora* of Fretz's Flora.)

Parasite on roots of clover and other herbs; scattered over most of the County but nowhere abundant.

Nockamixon (C); Upper Black Eddy (Pr); Sundale (L); Ottsville (L); Spinnerstown (L); Argus (F); Sellersville (F); Doylestown (Me); Rushland (L); Tullytown (C) (F).

BIGNONIACEAE (BIGNONIA FAMILY)

***Tecoma radicans** (L.) Juss. TRUMPET FLOWER. TRUMPET CREEPER.

Moist soil, probably introduced; rare.

Tullytown (F, August, 1882) (Ma, July 29, 1893).

***Catalpa bignonioides** Walt.

Common in cultivation but rarely established.

Quakertown (Bl–G); Sellersville (F); Bristol (L).

MARTYNIACEAE (MARTYNIA FAMILY)

***Martynia louisiana** Mill. UNICORN PLANT.

Persistent weed in cultivated ground.

Telford (B, August 30, 1921).

ACANTHACEAE (ACANTHUS FAMILY)

[Dianthera americana L.

Reported from Andalusia (Ma) but no material was found.]

PHRYMACEAE (LOPSEED FAMILY)

Phryma Leptostachya L. LOPSEED.

Rich woods and thickets; frequent in moist districts.

Monroe (R–R); Ottsville (B); Springtown (B); Rich Hill (B); Doylestown (Me); Brownsburg (L); Feasterville (B).

PLANTAGINACEAE (PLANTAIN FAMILY)

Plantago major L. COMMON PLANTAIN.

A weed in fields, meadows, woods, waste places and lawns; common.

Sellersville (F); Point Pleasant (B); Doylestown (Me).

Plantago Rugelii Dcne.

Similar situations as preceding species; common.

Sellersville (F); Telford (B); Neshaminy (Mc); Wrightstown (B).

***Platago lanceolata L.** RIB GRASS.

Waste places, open woods, fields and banks; very common.

Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc); Aquetong (L); Turkey Hill (L).

Plantago aristata Michx.

Dry sterile soil; frequent.

Upper Black Eddy (Tr–P); Revere (L); Sellersville (F); Telford (B); Fallsington (B); Tullytown (B).

Plantago virginica L.

Dry open situations; frequent.

Narrowsville (L); Upper Black Eddy (Pr); Ottsville (B); Pleasant Valley (F); Rockhill Station (F); Buckingham Valley (B); Fallsington (Dr); Bristol (F).

RUBIACEAE (MADDER FAMILY)

Galium Aparine L. CLEAVERS. GOOSE GRASS.

Banks, thickets and borders of woods in rich soil; common.

Monroe (R–R); Ferndale (L); Spinnerstown (L); Sellersville (F); Bedminster (L); Doylestown (Dr); Neshaminy (Mc); Rushland (L); Buckmanville (L); Morrisville (L) (Dr); Tullytown (L); Emile (B); Croydon (K).

***Galium verum L.** YELLOW BEDSTRAW.

Moist to dry places and fields; occasional.

Sellersville (F); Ingham Springs (Bt); Tullytown (J).

Galium pilosum Ait.

Dry or sandy fields and open woods; locally abundant.

Monroe (R–R); Pleasant Valley (B); Argus (F); Doylestown (Me); Yardley (L).

Galium circaezans Michx. WILD LICORICE.

Dry woods; frequent.

Upper Black Eddy (Tr–P); Buckwampum Mountain (R–R); Shelly (F); Rockhill (F); Dublin (L); Doylestown (Me); Neshaminy (Mc); Brownsburg (B); Turkey Hill (L).

Galium lanceolatum Torr. WILD LICORICE.

Dry woods and thickets; frequent on the Piedmont Plateau.

Upper Black Eddy (Tr–P); Buckwampum Mountain (R–R); Spinnerstown (L); Quakertown (C); Rockhill (F)(M)(J); Argus (B); Erwinna (B); Doylestown (Me); Brownsburg (B); (Solebury Township).

Galium boreale L. NORTHERN BEDSTRAW.

Dry banks and thickets; frequent except on Coastal Plain.

Nockamixon (C); Narrowsville (Bn); Wormansville (L); Quakertown (C)(Bn); Rockhill (E)(K)(M); Perkasie (W); Sellersville (F); Curley Hill (B); Doylestown (Me); (Argus).

***Galium Mollugo L.**

A weed of fields and waste places; occasional.

Sellersville (F); Doylestown (Fi); Parkland (B); Tullytown (F).

Galium Claytoni Michx.

Swamps, shores and wet ditches; locally abundant.

Monroe (R–R); Rockhill (F); Slickville (L); Tullytown (B); Bristol (L); Croydon (Dr).

Galium tinctorium L.

Damp open woods, thickets, meadows and swamps; frequent.

Nockamixon (C); Ottsville (L); Rockhill (M)(F); Argus; Neshaminy (Mc); Oxford Valley (L).

Galium concinnum T. & G.

Dry soil; rare.

Tullytown (C, August 16, 1896); (Bensalem).

Galium asprellum Michx.

Borders of streams and in swamps; occasional.

Monroe (R–R); Upper Black Eddy (Tr–P); Lower Black Eddy (L); Neshaminy (M); Grenoble (L); Yardley (Dr); Hulmeville (B).

Galium triflorum Michx. SWEET-SCENTED BEDSTRAW.

Dry woods and thickets; apparently scarce or absent on the Coastal Plain; frequent elsewhere.

Monroe (R–R); Haycock Mountain (B); Rockhill (F); Sellersville (F); Erwinna (L); Point Pleasant (L); Brownsburg (B); Washington's Crossing (Dr); Woodbourne (L); Neshaminy Falls (M); Yardley (L).

Diodia teres Walt. BUTTON WEED.

Dry or sandy soil; locally abundant on Coastal Plain, less frequent elsewhere.

Monroe (R–R); Sellersville (F); Point Pleasant (F); Turkey Hill (B); Tullytown (F); Bristol (F); Andalusia (Dr).

Mitchella repens L. PARTRIDGE BERRY.

Dry woods; common.

Haycock Mountain (L); Rockhill (M); Telford (B); Erwinna (L); Ottsville (L); Point Pleasant (L); Chalfont (L); Doylestown (Me); Center Bridge (L); Roelofs (L); Langhorne (B); Bristol (B); Andalusia (L).

Cephalanthus occidentalis L. BUTTONBUSH.

Swamps, ditches and borders of ponds; common.

Rattlesnake Hill, Duraham Township (R–R); Finland (B); Rockhill Station (B); Point Pleasant (B); Doylestown (Me); Neshaminy (Me); Buckingham (L); Washington's Crossing (Dr); Tullytown (B); Bristol (B).

Houstonia caerulea L. BLUETS.

Open grassy places and wet rocks; common.

Nockamixon (L); Sellersville (F); Tohickon (Me); Bedminster (L); Ottsville (B); Point Pleasant (L); Doylestown

(Me); Edison (Fo); Trevose (Dr); Brownsburg (L); Morrisville (L).

[Houstonia longifolia Gaertn.

Reported from the County but no specimen found.]

CAPRIFOLIACEAE (HONEYSUCKLE FAMILY)

Diervilla Lonicera Mill. BUSH HONEYSUCKLE.

(*D. Diervilla* of Fretz's Flora.)

Dry thickets, woods and open places; occasional in middle and upper districts.

Narrowsville (B); one mile north of Telford (B); Pipersville (L); Lumberville (Dr); Chalfont (L); Aquetong (K); Tullytown (L); (Rockhill); (Point Pleasant).

***Lonicera Morrowi** Gray.

Escaped from cultivation and established, Pleasant Valley (L); Morrisville (L).

***Lonicera japonica** Thunb. JAPANESE HONEYSUCKLE.

Dry banks and thickets; frequent.

Durham (R–R); Naceville (B); Telford (Sm); Dublin (F); Doylestown (B); Richboro (L); Tullytown (B).

Lonicera sempervirens L. TRUMPET HONEYSUCKLE.

Damp thickets; occasional.

Monroe (R–R); Kumry (Mu); Spinnerstown (L); Trumbauersville (F); Almont (L); Doylestown (Me); Aquetong (K); Bristol (Dr); Bensalem Township, 1¾ miles southwest of Hulmeville (B); (Tullytown).

Lonicera dioica L.

Dry to moist open or shaded situations; frequent except on Coastal Plain.

Durham Furnace (Aubrey H. Smith); Kintnersville (T); Nockamixon (C)(M)(V)(Bn); Upper Black Eddy (Bn); Finland (L); Rockhill (F); Almont (B); Argus (M); Erwinna (L); Ottsville (B); Pipersville (L).

[Symphoricarpos orbiculatus Moench.

(*S. Symphoricarpos* of Fretz's Flora.)

Reported from Smithtown, near Point Pleasant but no material seen.]

Symphoricarpos albus (L.) Blake. SNOWBERRY.

(*S. racemosus* of Gray's Manual, ed. 7.)

Rhodora, xvi. 118 (1914).

Rocky places; rare.

Rockhill (F, July, 1881).

***Symphoricarpos albus** (L.) Blake, var. **laevigatus** (Fernald) Blake.

(*S. racemosus*, var. *laevigatus* of Gray's Manual, ed. 7.)

Rhodora, xvi. 117 (1914).

Naturalized in waste ground, Almont (B, July 23, 1923).

Triosteum perfoliatum L. FEVERWORT. HORSE GENTIAN.

Rich open woods and thickets; rare.

Quakertown (B); Sellersville (F).

Triosteum perfoliatum L., var. **aurantiacum** (Bicknell) Wiegand.

(*T. aurantiacum* Bicknell.) Rhodora, xxv. 199 (1923).

Similar situations; more frequent than the species.

Pleasant Valley (B); Passer (B); Steinsburg (Wi); Finland (L); Point Pleasant (L); Forks of Neshaminy (Bn).

Triosteum angustifolium L.

Rich shaded soil; infrequent.

Durham (R–R); Quakertown (Me); Bedminster (Mo); Deep Run (F); (Pipersville).

Viburnum acerifolium L. MAPLE-LEAVED VIBURNUM.

Dry somewhat sterile soil in woods and thickets; common.

Monroe (R–R); Haycock Mountain (B); Spinnerstown (L); Milford Square (B); Rockhill (F); Uhlertown (Me); Ottsville (L); Lumberville (L); Doylestown (Me); Chalfont (L); Neshaminy (Mc); Aquetong (K); Buckingham Valley (B); Lahaska (L); Brownsburg (B); Richboro (L).

Viburum affine Bush, var. **hypomalacum** Blake.

(*V. pubescens* of authors, not Pursh.) Rhodora, xx. 11–15 (1918).

Dry soil in fence rows, pastures and rocky woods and banks; rare.

Nockamixon (C)(J)(Bn); Rockhill Station (B); Sellersville (F); Doylestown (Me).

Viburnum pubescens (Ait.) Pursh.

(*V. venosum* Britton). Rhodora, xx. 11–15 (1918).

Dry soil; rare.

Roadsides, Quakertown (F, June 2, 1923).

(Rockhill); (Sellersville); (Woodbourne).

The var. *Canbyi* was recorded by Fretz but no material referrable to this variety was found.

Viburnum Scabrellum (T. & G.) Chapm.

Woods, thickets and stream banks; frequent.

Buckwampum Mountain (L); Milford Square (Pr); Rockhill (K)(Br); Sellersville (F); Neshaminy (Mc); Woodbourne (F)(Bn); Yardley (L); Fallsington (L); Andalusia (L).

Virburnum dentatum L. Arrow-wood.

Moist soil in thickets, along streams and ponds and in swamps; frequent.

Monroe (R–R); Upper Black Eddy (Tr–P); Finland (L); Shelly (F); Point Pleasant (L); Neshaminy (Mc); Lahaska (L); Emilie (L); Tullytown (Bn).

Viburnum cassinoides L. Withe-rod.

Swampy woods, Yardley (Dr); Morrisville (L); Tullytown (Br–P).

Viburnum nudum L.

Swampy ground on the Coastal Plain; occasional.

Yardley (L); Oxford Valley (L); Tullytown (F)(C)(Bn); Bristol (F).

Viburnum Lentago L. Nannyberry. Sheepberry.

Rich moist to dry soil in thickets and on stream banks; frequent on the Piedmont Plateau.

Nockamixon (R–R); Spinnerstown (B); Rockhill (F)(V); Almont (L); South Perkasie (F); (Narrowsville); (Sellersville); (Buckmanville).

Viburnum prunifolium L. Black Haw.

Dry or moist soil of woods, thickets, pastures and banks; common.

Durham (L); Nockamixon (C); Ottsville (L); Haycock Mountain (B); Rockhill (M); Sellersville (F); Blooming Glen (F); Doylestown (Me); Neshaminy (Mc); Hartsville (Mrs. James Irwin); Penns Park (L); Richboro (L); Yardley (Dr); Tullytown (St).

Sambucus canadensis L. Common Elder.

Dry to moist fence rows, thickets and banks; common.

Monroe (R–R); Richlandtown (L); Sellersville (F); Telford (B); Point Pleasant (L); Doylestown (Me); Neshaminy (Mc); Slickville (L).

Sambucus racemosa L. Red-berried Elder.

(*S. pubens* Michx.)

Rocky woods and thickets; frequent along the cliffs of the Delaware River, rare elsewhere.

Kintnersville (Bn); Nockamixon (Ba)(Pr)(F)(J)(L); Quakertown (Ma); Point Pleasant (F); (Upper Black Eddy).

VALERIANACEAE (valerian family)

***Valerianella Locusta** (L.) Betcke. Corn Salad.

Old fields, meadows and waste places; common.

Sundale (L); Ottsville (L); Sellersville (F); Telford (B); Tohickon Creek, near Doylestown Pike, Tohickon Park (Bn); Pipersville (L); Doylestown (Me); Center Bridge (Fi); Tullytown (L).

Valerianella radiata (L.) Dufr.

Moist meadows and stream banks; infrequent.

Durham (R–R); Milford Square (L); Trumbauersville (F); Sellersville (P)(F); Telford (B); Pipersville (L); Tullytown (L).

Valerianella Woodsiana (T. & G.) Walp.

Moist meadows and stream banks; rare.

Argus (M); Sellersville (F)(J); Telford (B); Center Bridge (Fi).

The Sellersville material was recognized by Dr. Fretz as the var. *patellaria* (Sulliv.) Gray.

DIPSACACEAE (TEASEL FAMILY)

***Dipsacus sylvestris** Huds. WILD TEASEL.

Pastures, roadsides and waste places; frequent.

Monroe (R–R); between Ferndale and Narrowsville (Ha); Ottsville (B); Argus (B)(F); Doylestown (Me); Buckingham (L); George School (B); Newportville (B).

CUCURBITACEAE (GOURD FAMILY)

***Cucumis Melo** L. MUSKMELON.

Spontaneous in waste ground, Brownsburg (L, August 28, 1923).

Sicyos angulatus L. ONE-SEEDED BUR CUCUMBER.

Damp soil in waste places, stream banks and marshes; locally abundant.

Nockamixon (M); Sellersville (F); Doylestown (Me); Morrisville (B); Bristol (B).

Echinocystis lobata (Michx.) T. & G. WILD BALSAM APPLE.

(*Micrampelis lobata* of authors.)

Along streams and borders of marshes, also in damp waste places; frequent.

Wyker's Island (R–R); Sellersville (F); Telford (B); Tohickon Creek in Bedminster Township (F); Point Pleasant (B); Bushington (Me); Churchville (B); Tullytown (L).

CAMPANULACEAE (BLUEBELL FAMILY)

Specularia perfoliata (L.) A. DC. VENUS'S LOOKING GLASS.

Sterile or sandy soil in dry woods, fields and waste places; frequent.

Upper Black Eddy (Pr); Sellersville (F); Doylestown (Me); Tullytown (M); Bristol (Dr); Edgely (B); Andalusia (L).

***Campanula rapunculoides** L. BELLFLOWER.

Established in fields and along roadsides; occasional.

Quakertown (F); Telford (B); Buckingham (L); (Hilltown).

Campanula americana L. TALL BELLFLOWER.

Wet meadows, damp thickets and wooded swamps; apparently absent on Coastal Plain, occasional elsewhere.

Durham (R–R); Nockamixon (F); Sellersville (F); Point Pleasant (F); Doylestown (Me); Rushland (George Redles).

Campanula rotundifolia L. HAREBELL. BLUEBELL.

Rocky banks, shores and moist meadows; frequent along the Delaware River in the upper districts, rare elsewhere.

Nockamixon (F); Narrowsville (L)(Bn); Uhlertown (Me); Point Pleasant (F); Doylestown (Me); Hendricks Island, near Center Bridge (Fi); (Durham).

Campanula aparinoides Pursh. MARSH BELLFLOWER.

Wet open grassy situations; common.

Monroe (R–R); Weisel (B); Finland (W. Clarke–P); Sellersville (F); Telford (B); Point Pleasant (B); Doylestown (Me); Center Bridge (Fi); Yardley (Dr); Tullytown (M); Bristol (Dr).

LOBELIACEAE (LOBELIA FAMILY)

Lobelia cardinalis L. CARDINAL FLOWER.

Stream banks, wet shores, marshes and low meadows; frequent but nowhere very abundant.

Wykers Island (R–R); Rockhill (F); Almont (B); Point Pleasant (L); Doylestown (Me); Washington's Crossing (L); Tullytown (L); Andalusia (L).

Lobelia siphilitica L. GREAT LOBELIA.

Moist open or shady places; common.

Nockamixon (M); Haycock Mountain (Mc); Pleasant Valley (B); Finland (B); Rockhill (F); Almont (L); Point Pleasant (L); Doylestown (Me); Aquetong (L); Washington's Crossing (Me); Tullytown (B)(M).

Lobelia spicata Lam.

Dry to moist open situations; frequent.

Nockamixon (J); Rockhill (J)(M); Argus (B); Sellersville (F); Doylestown (Me); Bycot (K); Neshaminy (Mc).

Lobelia Nuttallii R. & S.

Moist soil on the Coastal Plain; locally abundant.

Yardley (Dr); Tullytown (C)(Bn)(Le); Bristol (C)(Ma).

Lobelia inflata L. INDIAN TOBACCO.

Dry open situations and thickets; common.

Monroe (R–R); Quakertown (B); Sellersville (F); Plumsteadville (B); Doylestown (Me); Edison (Bt); Neshaminy (Mc); Feasterville (B).

COMPOSITAE (COMPOSITE FAMILY)

Vernonia noveboracensis (L.) Willd. IRONWEED.

Meadows and other moist situations; common.

Monroe (R–R); Weisel (B); Rich Hill (F); Doylestown (Me); Neshaminy (Mc); Yardley (Me); Morrisville (L); Bristol (L); Andalusia (L).

[**Vernonia glauca** (L.) Willd.

Reported from the County but no material was found which could form a basis for this record.]

Eupatorium* purpureum L. JOE PYE WEED.

Low marshy places chiefly in sandy soil; frequent on the Coastal Plain.

Yardley (Me); Morrisville (L); Tullytown (L); Bristol (F).

Characterized by its solid stem, finely purple-speckled and not glaucous, its convex inflorescence and the leaves mostly in three's or four's. Often confused with *E. maculatum*. The material quoted by Fretz as *E. maculatum amoenum* has been found and identified as *E. purpureum*.

Eupatorium maculatum L. JOE PYE WEED.

Wet or moist to rather dry situations in thickets, borders of woods and along streams; frequent on the Piedmont Plateau; rare or absent on the Coastal Plain.

* For a discussion of the nomenclature of *E. purpureum* L. and species closely allied with it, see Wiegand, Rhodora, xxii. 62 (1920) and Mackenzie, Rhodora, xxii. 157–165 (1920). The names in this list follow those proposed by Mackenzie.

Buckwampum Mountain (L); Haycock Mountain (B); Finland (L); Almont (L); Sellersville (F); Woodbourne (L); Fallsington (L).

Stems usually tall, hollow, cylindrical, purple and glaucous; leaves in four's to six's; inflorescence large, convex.

Eupatorium trifoliatum L.

Moist or dry chiefly upland woods and thickets; frequent.

Buckwampum Mountain (L); Ottsville (L); Point Pleasant (L).

Stem tall, slender, usually solid, green with purple nodes; leaves in three's or four's; inflorescence convex; its branches widely spreading, sometimes nearly horizontal.

Eupatorium leucolepis T. & G.

Moist gravel pits, Bristol (B, August 4, 1927).

Eupatorium hyssopifolium L.

Dry gravelly bank, Bristol (F, September 29, 1923).

Eupatorium verbenaefolium Michx.

Moist soil of the Coastal Plain; rare.

Yardley (L); Morrisville (Fo–P); Fallsington (L); Bristol (L); (Springfield); (Tullytown).

[Eupatorium rotundifolium L.

Reported from near Bristol. No material seen.]

Eupatorium pubescens Muhl.

Dry or sandy soil; rare.

Yardley (L); Bristol (L).

Eupatorium sessilifolium L. Upland Boneset.

Dry cliffs, banks and rocky woods; rare and local.

Monroe (R–R); Ottsville (L); Tohickon Park (B); Doylestown (Me); Levin (F).

Eupatorium perfoliatum L. Thoroughwort. Boneset.

Moist open ground; common.

Monroe (R–R); Richlandtown (B); Finland (L); Sellersville (F); Neshaminy (Mc); Brownsburg (L); Washington's Cross-

ing (Me); Langhorne (L); Tullytown (B); Bristol (L); Andalusia (L).

Eupatorium urticaefolium Reichard. White Snakeroot.

(*E. ageratoides* of Fretz's Flora.)

Rich woods, thickets and fence-rows; common.

Narrowsville (M); Haycock Mountain (Gr); Finland (L); Rockhill (Br–P); Point Pleasant (B); Doylestown (Me); Center Bridge (L); Brownsburg (L); Washington's Crossing (Me); Yardley (Me); Tullytown (B); Penns Manor (F).

[Eupatorium coelestinum L.

Reported from the lower end by Martindale and from Rockhill (F) but no material found. Perhaps confused with the preceding species.]

Mikania scandens (L.) Willd. Climbing Hempweed.

Marshes and wet thickets along streams; locally abundant.

Ottsville (L); Ridge Valley (B); Rockhill (F); Yardley (L); Tullytown (L); Bristol (B); Andalusia (L).

Liatris spicata (L.) Willd. Button Snakeroot.

(*Lacinaria spicata* of Fretz's Flora.)

Moist open soil thickets; infrequent but very abundant where found.

Ringing Rocks, Bridgeton Township (R–R); Rosedale (Bl–G); Ridge Valley, near Argus (F, September, 1882, and August, 1898); (Rockhill).

Chrysopsis mariana (L.) Nutt. Golden Aster.

Sandy soil; occasional on the Coastal Plain.

Glen Lake (F); Turkey Hill (B); Bristol (F).

Solidago squarrosa Muhl.

Dry stony or rocky slopes, also open woods and thickets; an Alleghanian plant occurring occasionally except on the Coastal Plain.

Narrowsville (M); Nockamixon (Pr) (V) (J); Tinicum Creek (F); Point Pleasant (B); Argus (F).

Solidago caesia L. BLUE-STEMMED GOLDENROD.

Dry open woods, thickets and pastures; common.

Narrowsville (M); Haycock Mountain (B); Rockhill (F); Sellersville (F); Lumberville (L); Doylestown (Me); New Britain Township (Gr); Buckingham (L); Penns Park (L); Yardley (Me).

[**Solidago caesia** L., var. **axillaris** (Pursh) Gray.

This is a northern variety and is not found in the County. There is a Sellersville (F) record but the material on which it is based proves to be ordinary *S. caesia.*]

Solidago latifolia L.

(*S. flexicaulis* of Fretz's Flora.)

Rich moist to dry woods and thickets; frequent on the Piedmont Plateau.

Narrowsville (F) (M); Nockamixon (F); Ottsville (B); Finland (L): Sellersville (F); Pipersville (B); Lumberville (L); Chalfont (L); Washington's Crossing (Me); Yardley (L); (Bedminster).

Solidago bicolor L.

Dry open woods, thickets and pastures; frequent.

Narrowsville (M); Ottsville (B); Haycock Mountain (Mc); Pleasant Valley (B); Sellersville (F); Aquetong (L); Neshaminy (Mc); Bristol (F).

[**Solidago hispida** Muhl.

A northern species. No Bucks County material found, although reported from Sellersville, Doylestown and Buckingham.]

Solidago puberula Nutt.

A single specimen in the Herbarium of George School, collected by Frank Ball, on Buckingham Mountain, September 17, 1927. The first person to report its occurrence at this station is J. Kirk Leatherman, Esq.

Solidago speciosa Nutt.

Reported from Nockamixon (J) but no material found.]

[Solidago sempervirens L.

Reported from Penn Valley (C) but this record is based on misidentified material. This is a species found near the seacoast.]

[Solidago patula Muhl.

A plant of northern bogs and swamps reported from a swamp in Springfield but no material was found.]

Solidago arguta Ait.

Dry stony or rocky situations and open woods; frequent in upper districts.

Nockamixon (J); Springtown (L); Rockhill (B); Argus (F); Lumberville (L); Solebury (Gr).

Solidago juncea Ait. EARLY GOLDENROD.

Thickets and dry fields; common except on Coastal Plain.

Narrowsville (Ha); Nockamixon (J); Rockhill (F); Argus (F); Sellersville (B); Point Pleasant (L); Neshaminy (Mc); (Doylestown).

Solidago neglecta T. & G. SWAMP GOLDENROD.

Swampy ground on Coastal Plain; infrequent.

Yardley (L); Tullytown and Penn Valley (C, all on one label); Bristol (F).

[Solidago suaveolens Schoepl.

(*S. odora* Ait.) Rhodora, xxi. 69 (1919).

Known in some Pennsylvania localities as Blue Mountain tea. Reported from Andalusia (Ma) but no material was found.]

Solidago ulmifolia Muhl.

Dry woods and thickets; frequent in upper districts.

Monroe (R–R); Rockhill (F); Perkasie (Pr); Lumberville (L); Neshaminy (L).

Solidago rugosa Mill.

Dry fields, fence rows and roadsides; common.

Durham Furnace (R–R); Wykers Island (R–R); Pleasant Valley (B); Finland (L); Sellersville (F); Almont (L); Point

Pleasant (F); Doylestown (Me) Grenoble (L); Yardley (Me); Morrisville (Fo–P); Penn Valley (Co); Tullytown (C); Bristol (B).

Solidago rugosa Mill., var. **aspera** (Ait.) Fernald.

(*S. aspera* of Gray's Manual, ed. 7.) Rhodora, xvii. 7 (1915).

Dry or sandy soil chiefly on the Coastal Plain; frequent.

Neshaminy (Mc); Roelofs (L); Yardley (L); Penns Manor (F); Tullytown (B).

Solidago nemoralis Ait.

Dry open mostly sterile soil; common.

Nockamixon (M); Ottsville (L); Haycock Mountain (B); Finland (B); Sellersville (F); Doylestown (Me); Buckingham (K); Washington's Crossing (Me); Roelofs (L); Tullytown (F); Bristol (B).

Solidago canadensis L.

(Includes *S. canadensis,* var. *scabriuscula* of Fretz's Flora.)

Damp soil in fields, thickets and on stream banks; frequent on the Piedmont Plateau.

Monroe (R-R); Pleasant Valley (B); Quakertown (Pr); Rockhill (F); Sellersville (B); Deep Run (F); Washington's Crossing (Me); Penns Manor (F).

Solidago altissima L.

Dry or rich open soil and thickets; rare.

Rockhill (B); Pipersville (F).

Solidago serotina Ait.

Moist fields, thickets and woods; common.

Narrowsville (Ha); Finland (L); Rockhill (F); Sellersville (F); Point Pleasant (L); Chalfont (L); Langhorne (L); Morrisville (Ba); Bristol (L); Andalusia (L).

The Sellersville material forms the basis of Fretz's record of *S. serotina gigantea* but it is not a good extreme of the species and is considered here as belonging to the typical species.

Solidago rigida L.

Dry situations; rare and local.

Perkasie (F); Sellersville (B); Pipersville (B).

Solidago graminifolia (L.) Salisb., var. **Nuttallii** (Greene) Fernald.

(*Euthamia graminifolia* of Fretz's Flora.)

Dry or moist, sterile mostly sandy or gravelly soil; frequent.

Monroe (R–R); Revere (L); Rockhill (B); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc); Morrisville (Ba); Penns Manor (F); Bristol (C).

Solidago tenuifolia Pursh.

(*Euthamia caroliniana* of Fretz's Flora.)

Dry sand soil of Coastal Plain; occasional.

Tullytown (F); Bristol (B).

Aster divaricatus L. White Wood Aster.

Dry open woods, thickets and banks; common.

Nockamixon (M); Haycock Mountain (Mc); Pleasant Valley (B); Quakertown (B); Rockhill (F); Argus (F); Point Pleasant (B); Brownsburg (L); Jamison (Dr); Yardley (Me).

[**Aster Calytoni** Burgess.

Reported from Argus but no material was found.]

Aster Schreberi Nees.

Dry woods of upper districts; rare.

Rockhill (F); Point Pleasant (B); Doylestown (Mc).

Aster macrophyllus L.

Shaded places in moderately damp soil; common.

Monroe (R–R); Rockhill Station (F); Argus (F); Ridge Valley (F); Chalfont (L); Feasterville (B); Fallsington (L).

Aster radula Ait.

Low woods; rare.

Yardley (L, September 27, 1924).

Aster novae-angliae L. New England Aster.

Fields, thickets and roadsides; occasional.

Nockamixon (M); Passer (B); Doylestown (Me); Jamison (Dr); Bridge Valley (Dr); Washington's Crossing (Me); Yardley (Me).

Aster patens Ait.

Dry open places; rare.

Monroe (R–R); Rockhill (F); Danboro (B); Lumberville (L); Doylestown (Me).

Aster patens Ait., var. **phlogifolius** (Muhl.) Nees.

(*A. phlogifolius* Muhl.)

Sandy or rocky woods and thickets; rare.

Haycock Mountain (B); Rockhill (F); Doylestown (Me).

Aster undulatus L.

Dry fields and thickets; frequent.

Rattlesnake Hill, Durham Township (R–R); Rockhill (F); Argus (F); Doylestown (Me); Buckingham Mountain (L); Grenoble (L).

Aster cordifolius L.

Open woods, thickets, dry fields and roadsides; common.

Nockamixon (M); Ottsville (L); Finland (L); Rockhill (K); Sellersville (M); (F); Chalfont (L); Jamison (Dr); Brownsburg (L); Washington's Crossing (Me); Yardley (Me); Morrisville (F).

Some of the above material approaches the var. *polycephalus* Porter but the characters are not sufficiently marked to recognize any of the material as a good example of the variety.

Aster Lowrieanus Porter.

Dry fields, roadsides and thickets; occasional except on the Coastal Plain where it is very rare or absent.

Nockamixon (E); Rockhill (F); Argus (F); Grier's Corner (Gr).

The Rockhill specimen forms the basis of Fretz's record of the var. *Bicknelli* Porter but the material seems closer to the typical species.

Aster Lowrieanus Porter, var. **lanceolatus** Porter.

(*A. Lowrieanus,* var. *lancifolius* of Fretz's Flora.)

Similar situations; rare.

Argus (F, October 7, 1898).

Aster sagittifolius Wedemeyer.

Thickets and dry fields; rare.

Pleasant Valley (B, September 15, 1923); (Haycock); (Rockhill); (Bedminster).

Aster laevis L. Smooth Aster.

Dry fields, thickets and banks; frequent except in lower districts.

Nockamixon (M); Revere (L); Rockhill (F); Argus (K); Sellersville (F); Telford (B); Chalfont (L); Doylestown (Me); Bridge Valley (Dr); Pineville (Fo); Grenoble (L); (Perkasie).

The species is variable in width of leaf.

Aster laevis L., var. **amplifolius** Porter.

Similar situations; rare.

Rockhill (F, October 7, 1898).

This is a very broad leaved form.

Aster ericoides L. Heath Aster.

Dry, usually sandy fields and roadsides; common.

Nockamixon (M); Haycock Mountain (Mc); Passer (B); shelly (B); Sellersville (F); Telford (B); Chalfont (L); Point Pleasant (L); Doylestown (Me); Neshaminy (Mc); Buckingham (K); Bridge Valley (Dr); Morrisville (B); Bristol (Dr).

Aster amethystinus Nutt.

Moist soil; rare.

Narrowsville (E, September 29, 1909, October 6, 1911, and September 17, 1912).

Aster multiflorus Ait.

Dry sandy soil; rare and local.

Monroe (R–R); Upper Black Eddy (D); Point Pleasant (L).

[**Aster dumosus** L.

Reported from Deep Run but no material was found.]

Aster vimineus Lam.

Moist open soil and woods; most abundant on Coastal Plain.

Rockhill (F); Yardley (Me); Morrisville (Dr); Fallsington (L); Penns Manor (F); Tullytown (B); Bristol (B); (Point Pleasant).

Aster lateriflorus (L.) Britton. STARRED ASTER.

Dry or moist fields, thickets and roadsides; common.

Riegelsville (R–R); Pleasant Valley (B); Finland (L); Rockhill (Br)(B); Hilltown (F); Doylestown (Me); Yardley (Dr); Morrisville (B); between Bristol and Newtown (Joseph Carson, 1862).

This is a very variable species. The Rockhill (Br) specimen approaches var. *thyrsoides* (Gray) Sheldon and formed the basis for Fretz's record of this variety.

Aster Tradescanti L.

Low ground in fields and thickets; rare and local.

Wyker's Island (R–R); Point Pleasant (L); Brownsburg (L); Yardley (Me); Bristol (B).

Aster paniculatus Lam.

Wet meadows, thickets and open woods; frequent.

Monroe (R–R); Rockhill (G. Berenger); Sellersville (F); Neshaminy (Dr); Washington's Crossing (Me); Yardley (Me); Penns Manor (F); Bristol (B); (Buckingham); (Tullytown).

Aster salicifolius Ait.

Low ground; rare.

Wyker's Island (R–R); Sellersville (F).

Aster novi-belgii L.

Sandy soil of the Coastal Plain; local.

Morrisville (Dr); Bristol (B).

Aster prenanthoides Muhl.

Damp soil of roadsides, stream banks, thickets and rich open woods; infrequent in upper and middle districts; apparently absent from the Coastal Plain.

Finland (Bl–G); Rockhill (F); Three Mile Run (F); Chalfont (L); Doylestown (Me); Neshaminy (Dr); Grenoble (L); (Pipersville); (Solebury).

The Three Mile Run specimen is the basis of Fretz's record for *A. prenanthoides porrectifolius* Porter.

Aster puniceus L.

(Includes *A. puniceus* L., var. *Crawfordii* Porter of Fretz's Flora.)

Moist to wet situations; common.

Nockamixon (F); Pleasant Valley (B); Finland (L); Rockhill (F)(K); Sellersville (F); Doylestown (Me); Neshaminy (Mc); Bridge Valley (Dr); Yardley (Me); Tullytown (B); Bristol (B).

The Nockamixon material was recorded by Fretz as var. *firmus* (Nees) T. & G. but it comes nearer to the typical species.

Aster umbellatus Mill.

(*Doellingeria umbellata* of Fretz's Flora.)

Moist thickets, borders of woods and marshes; frequent.

Kintnersville (R–R); Rockhill (F); Argus (F); Tullytown (C); Bristol (St).

Aster infirmus Michx.

(*Doellingeria infirma* of Fretz's Flora.)

Dry sandy or rocky soil; occasional.

Rockhill (F); Tohickon (Gr); Buckingham (L); (Sellersville); (Pipersville); (Bristol).

Aster linariifolius L.

(*Ionactis linariifolius* of Fretz's Flora.)

Dry stony or sandy soil; occasional.

Hoots Mill, Argus (F); Doylestown (Me); Center Bridge (Fi).

Aster acuminatus Michx.

Damp woods in humus; rare,

Aquetong (L, September 13, 1931); Tullytown (B, September 7, 1928); (Doylestown according to J. Kirk Leatherman but no herbarium material was seen).

Erigeron pulchellus Michx. Robin's Plantain.

Meadows, banks and slopes; frequent.

Nockamixon (H)(M); Buckwampum Mountain (F); Haycock Mountain (L); Milford Square (L); Finland (K); Argus (Sm); Neshaminy (L); New Hope (L).

Erigeron philadelphicus L.

Moist fields, banks and woods; apparently rare on the Coastal Plain, frequent elsewhere.

Nockamixon (M) (C); Upper Black Eddy (B); Ottsville (L); Spinnerstown (L); Argus (F); Ridge Valley (F); Telford (Sm); Tullytown (C) (J); (Point Pleasant).

***Erigeron annuus** (L.) Pers. DAISY FLEABANE.

A weed of fields and waste places; common.

Pleasant Valley (L; Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc).

Erigeron ramosus (Walt.) BSP. DAISY FLEABANE.

Similar situations as preceding; common.

Richlandtown (L); Rockhill (M); Sellersville (F); Telford (B); Neshaminy (Mc); Lahaska (L).

Erigeron canadensis L. HORSE WEED.

(*Leptilon canadense* of Fretz's Flora.)

A weed of fields, woods and waste places in rather rich soil; common.

Durham Furnace (R–R); Pleasant Valley (B); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc); Langhorne (L); Bristol (B).

Sericocarpus asteroides (L.) BSP. WHITE-TOPPED ASTER.

Dry woods and banks; infrequent.

Monroe (R–R); Nockamixon (J); Sellersville (F); Brownsburg (L); Newportville (F).

Sericocarpus linifolius (L.) BSP.

Dry or sandy soil; rare.

Doylestown (F); Bristol (D).

***Gilfola germanica** (L.) Dumort.

A rare adventure, Bedminster (F, July, 1881).

[Pluchea camphorata (L.) DC.

A salt marsh plant reported from Bristol (D) but no specimen found.]

Antennaria Parlinii Fernald.

Damp or dry soil of open woods; not rare except on Coastal plain where it is less frequent.

Rockhill (M); Ottsville (L); Pipersville (L); Dublin (L); Fountainville (L); Lumberville (L); Aquetong (L); Penn Valley (F); (Tullytown).

Antennaria plantaginifolia (L.) Richards. PLANTAIN-LEAVED EVERLASTING.

Sterile soil in fields, pastures and roadsides; frequent.

Narrowsville (Pr); Rockhill (M) (F); Aquetong (Wi); Buckingham Valley (B); Rushland (L); Grenoble (L); Brownsburg (L); Penn Valley (C).

Antennaria fallax Greene. LADIES' TOBACCO. PUSSY'S TOES.

Dry open woods and fields; frequent.

Upper Black Eddy (Fo) (Tr–P); Milford Square (L); Rockhill (M); Perkasie (F); Sellersville (F); Telford (B); Tohickon Creek, north of Doylestown (Bn); Dublin (L); Lumberville (L); Neshaminy Creek, near Doylestown (W); Aquetong (K); Washington's Crossing (B); Emilie (B).

Antennaria neodioica Greene. PUSSY'S TOES.

Dry sterile soil; common.

Nockamixon (P) (Pr); Buckwampum Mountain (L); Milford Square (L); Rockhill (M); Telford (B); Dublin (B); Neshaminy (L); Grenoble (L); Roelofs (L); Morrisville (Dr); Penn Valley (F); Tullytown (C); (Sellersville).

Antennaria neglecta Greene. PUSSY'S TOES.

Damp to dry pastures and fields; common.

Revere (W); Rockhill (M); Sellersville (F); Ridge Valley (F); Edison (Fo); Neshaminy (L); New Hope (Sg); Grenoble (L); Tullytown (C); Trevose (Dr).

Anaphalis margaritacea (L.) B. & H. PEARLY EVERLASTING.

Dry open woods and pastures; frequent.

Narrowsville (M); Buckwampum Mountain (L); Finland (B); Sellersville; Plumsteadville (Dr); Fountainville (L); Doylestown (Me); Buckingham (L); Fallsington (B)

Gnaphalium obtusifolium L. COMMON EVERLASTING.

(*G. polycephalum* of Gray's Manual, ed. 7.) Rhodora, xx. 71 (1918).

Dry fields and roadside banks; frequent.

Monroe (R–R); Rockhill (F); Brownsburg (B); Tullytown (B); Bristol (B).

Gnaphalium uliginosum L. Low Cudweed.

Damp soil or dried out mud of ditches, shores and roadsides; frequent.

Riegelsville (L); Rockhill (F); Point Pleasant (L); Doylestown (Me); Brownsburg (L); Yardley (L); Morrisville (L); Oxford Valley (L).

Gnaphalium purpureum L.

Dry sandy soil; rare.

Rockhill (F); Turkey Hill (L).

***Inula Helenium** L. Elecampane.

Naturalized in fields and along roadsides; occasional.

Rockhill (F); Sundale (L); Point Pleasant (B); (Ridge Valley).

Ambrosia trifida L. Great Ragweed.

Moist alluvial soil and waste places; common.

Monroe (R–R); Sellersville (F); Doylestown (Me); Neshaminy (Mc); Andalusia (L).

Ambrosia trifida L., var. **integrifolia** (Muhl.) T. & G.

Similar situations; frequent.

Sellersville (F); Bristol (B).

Ambrosia artemisiifolia L. Roman Wormwood.

Waste places, fields and roadsides; very common.

Monroe (R–R); Perkasie (B); Telford (B); Plumsteadville (L); Point Pleasant (L); Doylestown (Me); Neshaminy (Mc); Langhorne (L); Yardley (L); Bristol (B).

[Xanthium spinosum L.

A naturalized weed reported from Doylestown and Bristol but no specimens were found.]

Xanthium chinense Mill. Cocklebur.

(*X. canadense* of Gray's Manual, ed. 7. *X. glabratum* of Fretz's Flora.) Field Mus. Nat. Hist. Pub. Bot. iv, 17 (1919).

Rich moist soil of banks, ditches and waste places; occasional.

Sellersville (F); Chalfont (L); Doylestown (Me); Washington's Crossing (Me).

Xanthium pennsylvanicum Wallr.

(*X. canadense* of Gray's Manual, ed. 7.)

Rich moist soil; rare.

Sellersville (F, August 29, 1898).

Xanthium italicum Mor. COCKLEBUR.

(*X. commune* of Gray's Manual, ed. 7.)

Field Mus. Nat. Hist. Pub. Bot. iv, 40 (1919).

Waste places and moist grounds; frequent.

Riegelsville (F); Ottsville (B); Pleasant Valley (B); Sellersville (F); Telford (B); Brownsburg (B); Yardley (L); Bristol (B).

[Xanthium echinatum Murr.

A seacoast form reported from Sellersville by C. D. Fretz. The material forming the basis of this record has been reidentified as *X. italicum*.]

Heliopsis helianthoides (L.) Sweet. OX-EYE.

Nockamixon (C); Sellersville (F); Point Pleasant (L); Bristol (Dr); Andalusia (L); (Telford).

Eclipta alba (L.) Hassk.

River banks and moist waste places; infrequent.

Point Pleasant (F); Lumberville (B); Washington's Crossing (Me); Quakertown).

***Rudbeckia triloba** L.

Roadsides and waste places; occasional as an introduction.

Pleasant Valley (B); Quakertown (B); Sellersville (F); Bristol (L).

Rudbeckia hirta L. BLACK-EYED SUSAN.

Pastures, fields and meadows; common.

Monroe (R–R); Finland (L); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc).

Rudbeckia fulgida Ait. ORANGE CONE FLOWER.

Dry open places and thickets; occasional but at some stations very abundant.

Nockamixon (F) (Bn); Revere (L); Finland (L); Argus (F); Rockhill (F); Telford (B).

Rudbeckia laciniata L. TALL CONE FLOWER.

Low alluvial soils and moist thickets; frequent.

Monroe (R–R); Revere (R–R); Almont (L); Sellersville (F); Doylestown (Me); Yardley (Dr); Emile (B).

***Helianthus annuus** L. COMMON SUNFLOWER.

Roadsides and waste places; occasional as an escape.

Lumberville (L, August 14, 1923).

Helianthus angustifolius L. SWAMP SUNFLOWER.

Wet soil; rare.

Tullytown (Br, September 23, 1893) (C, September 12, 1894) (F, September 17, 1898).

Helianthus giganteus L.

Swamps, wet meadows and low thickets; frequent.

Rockhill (G); Doylestown (Me); Neshaminy (Mc); Tullytown (F) (C); Bristol (B).

Helianthus divaricatus L.

Dry soil in open woods and thickets; occasional.

Durham (R–R); Nockamixon (M); Ottsville (B); Rockhill (F); Deep Run (F); Doylestown (Me).

Helianthus strumosus L.

Damp to dry open woods and thickets; infrequent.

Durham (We); Rockhill (F); Plumstead (Mo).

Helianthus tracheliifolius Mill.

Open woods and thickets; rare.

Narrowsville (M, September 23, 1893).

Helianthus decapetalus L.

Along streams and in moist woods and thickets; frequent.

Nockamixon (J); Rockhill (F); Point Pleasant (B); Morrisville (Ba); Tullytown (L).

***Helianthus tuberosus** L. Jerusalem Artichoke.

Roadsides and waste places; occasional as a garden escape.

Durham (R–R); (F); Bedminster (Kr); Washington's Crossing (Me); Morrisville (L); Bristol (F).

Coreopsis rosea Nutt.

Swamps and shores of the Coastal Plain; rare.

Bristol (Ma, 1865) (D, August 19, 1866).

Coreopsis lanceolata Nutt.

Rare, perhaps an escape.

Lahaska (L, June 12, 1920); (Andalusia).

***Cosmos bipinnatus** Cav.

Adventive in waste places; occasional.

Sellersville (F); Blooming Glen (B).

Bidens bidentoides (Nutt.) Britton. Swamp Beggar Ticks.

Shores of the Delaware River; rare.

Morrisville (Ba); Andalusia (L); (Bristol).

Bidens discoidea (T. & G.) Britton.

Swamps and shores, or on floating logs; rare.

Lumberville (L); Oxford Valley (L); Tullytown (C); Bristol (F).

Bidens frondosa L. Beggar Ticks.

Moist soil; a common weed.

Sellersville (F); Telford (B); Neshaminy (Dr); Washington's Crossing (Ma); Yardley (L); Morrisville (L); Bristol (F); Andalusia (L).

Bidens vulgata Greene. Beggar Ticks.

Moist soil of roadsides and waste places; occasional.

Sellersville (F); Point Pleasant (F).

This species becomes more common westward.

Bidens comosa (Gray) Wiegand.

Ditches, sandy shores and low moist ground; common.

East Rockhill Township (F); Sellersville (F); Telford (B); Point Pleasant (B); Neshaminy (Dr); Brownsburg (L); Yard-

ley (L); Morrisville (Ba); Oxford Valley (L); Bristol (St) (L).

Bidens connata Muhl.

Low moist ground; swamps and ditches; common.

Haycock Mountain (B); South Perkasie (F); Sellersville (F); Doylestown (Me); Yardley (L); Oxford Valley (L); Tullytown (B); Bristol (F) (L); Andalusia (L).

Bidens cernua L.

Wet soil in various situations; common.

Point Pleasant (F) (B); Neshaminy (Dr); Bridge Valley (Dr); Brownsburg (L); Washington's Crossing (Me); Yardley (L); Morrisville (Ba); Tullytown (F); (Aquetong); (Lower Solebury).

Bidens laevis (L.) BSP.

Wet meadows; swamps and ditches; common.

Quakertown (F); (Pr); Rocky Ridge (B); Rockhill (F); Weisel (Sm); Argus (K); Sellersville (F); Doylestown (Me); Yardley (Me); Morrisville (F); Tullytown (F); Emilie (Dr); Bristol (St); Andalusia (Dr).

Bidens bipinnata L. Spanish Needles.

Moist places and waste ground; occasional.

Upper Black Eddy (Tr–P); Ottsville (B); Pleasant Valley (B); Sellersville (F); Bridge Valley (Dr).

Bidens trichosperma (Michx.) Britton. Tickseed Sunflower.

Swamps of the Coastal Plain; locally abundant.

Roelofs (L); Penns Manor (B); Turkey Hill (B); Penn Valley (C); Tullytown (F); Bristol (F).

Bidens involucrata (Nutt.) Britton.

Tow path, Narrowsville (V, September 9, 1904); wet soil along Common Creek, Tullytown (B, September 7, 1928). Probably introduced from farther westward.

[Galinsoga parviflora Cav.

Not known from the County although reported from Quakertown and Andalusia. Possibly confused with the next species.]

***Galinsoga ciliata** (Raf.) Blake.

(*G. parviflora* Cav., var. *hispida* of Gray's Manual, ed. 7. *G. aristulata* Bickn.) Rhodora, xxii. 97 (1920), xxiv. 34 (1922) and xxv. 13 (1923).

Cultivated ground and shaded waste places; common.

Ottsville (B); Sellersville (B); Telford (B); Doylestown (Me); Neshaminy (Me); Washington's Crossing (Me); Tullytown (B); (Point Pleasant).

Helenium nudiflorum Nutt. PURPLE SNEEZEWEED.

Moist soil; occasionally naturalized; a native of the southern and western states.

Neshaminy (B); Grenoble (L); Holland (B); Hulmeville (L).

Helenium autumnale L. SNEEZEWEED.

Marshes, low thickets and along streams; frequent.

Sellersville (F); Doylestown (Me); Neshaminy (Dr); Bridge Valley (Dr); Brownsburg (L); Washington's Crossing (Me); Penns Manor (B); Tullytown (B); Andalusia (Dr) (L).

***Achillea Millefolium** L. COMMON YARROW. MILFOIL.

A weed of fields, banks and waste places; common.

Rufe's School, Durham Township (F); Ottsville (B); Rocky Ridge (L); Telford (B); Dublin (F); Doylestown (Me); Neshaminy (Mc); Buckmanville (L); Yardley (Me); Neshaminy Falls (M).

***Anthemis Cotula** L. MAYWEED.

Barnyards, roadsides, fields and waste places; common.

Rufe's School, Durham Township (F); Revere (L); Almont (F); Sellersville (F); Chalfont (L); Doylestown (Me).

***Anthemis arvensis** L. CORN CAMOMILE.

Dry roadsides, fields and waste places; common.

Monroe (R–R); Ottsville (L); Sellersville (F); New Hope (B); Grenoble (L); Washington's Crossing (L); Morrisville (L); Tullytown (M); Croydon (K); (Point Pleasant).

*Chrysanthemum Leucanthemum L., var. pinnatifidum Locoq. & Lamotte. Ox-eye Daisy.

Fields, meadows and roadsides; common.

Monroe (R–R); Ottsville (B); Rich Hill (L); Telford (B); Doylestown (Me); Bycot (B); Neshaminy (B); Langhorne (B).

The typical species is unknown in our area but is common northward.

*Chrysanthemum Parthenium (L.) Bernh. Feverfew.

A garden escape; rare.

Sellersville (F, August, 1883); Bristol (B, July 13, 1931).

*Matricaria Chamomilla L. German Camomile.

Naturalized in waste ground; rare.

Sundale (L, July 12, 1923); Rockhill (Br, June 1, 1890).

*Matricaria suaveolens (Pursh) Buchenau. Pineapple Weed.

Established along roadside, Rich Hill (L, July 8, 1922).

*Tanacetum vulgare L. Tansy.

Established in waste places and along roadsides; frequent.

Monroe (R–R); Haycock Run (B); Danboro (L); Brownsburg (L); Grenoble (L).

[Artemisia vulgaris L.

Reported as occurring in waste places but no herbarium material was found.]

*Artemisia Stelleriana Bess. Dusty Miller. Old Woman.

Waste ground, Sellersville (F, September 17, 1923, and July 4, 1924).

*Artemisia pontica L. Roman Wormwood.

Escaped along roadside, opposite an old house, near Ottsville (L, September 19, 1931).

*Artemisia annua L.

Established as a weed in waste places; rare.

Riegelsville (L); Narrowsville (J); Nockamixon (R).

*Tussilago Farfara L. Coltsfoot.

Roadside, Revere (L, July 6, 1909) (W, April 30, 1911).

***Petasites vulgaris** Hill. Butter Bur. Butterfly Dock.

(*P. vulgaris* of Fretz's Flora.)

Damp waste ground; rare.

Quakertown (Ma); Rockhill (C) (F).

Erechtites hieracifolia (L.) Raf. Fireweed.

Moist woods and clearings; common.

Monroe (R–R); Sellersville (F); Telford (B); Brownsburg (B); Morrisville (L) (Dr); Bristol (B); Feasterville (B).

Cacalia atriplicifolia L. Indian Plantain.

(*Mesadenia atriplicifolia* of Fretz's Flora.)

Woods and thickets; rare.

Durham (R–R); Point Pleasant (F); Buckingham (L); Penn Valley (C); (Lumberville).

[Sececio vulgaris L.

An adventive reported from Sellersville and Andalusia but no material was found.]

Senecio obovatus Muhl.

Moist woods and banks; rare.

Nockamixon (C) (M) (F) (V & L) (Bn); (Durham); (Springfield).

Senecio obovatus Muhl., forma **elongatus** (Pursh) Fernald.

(*S. obovatus* var. *elongatus* of Gray's Manual, ed. 7.) Rhodora, xxx. 225 (1928).

Similar situations; rare. Nockamixon (M, May 28, 1893).

Senecio aureus L. Golden Ragwort.

Wet meadows, swamps and thickets; common.

Three Mile Run (F); Sellersville (F); Telford (B); Edison (Fo); Neshaminy (Mc); Woodbourne (Bn); Tullytown (C) (F) (St); Andalusia (L).

Senecio aureus L., var. **gracilis** (Pursh) Britton.

Similar situations; frequent.

Nockamixon (C); Quakertown (F); Rockhill (M); Tohickon Creek, west of Doylestown Pike (Bn); (Sellersville).

Senecio pauperculus Michx., var. **Balsamitae** (Muhl.) Fernald.

(*S. Balsamitae* of Fretz's Flora.) Rhodora, xxiii. 299 (1921).

Dry or rocky soil and in meadows and pastures; common.

Nockamixon (C); Uhlertown (Me); Perkasie (F) (M); Rockhill (M); Sellersville (P) (M); Argus (F); Telford (B); Doylestown (Dr); Aquetong (K); Newtown (Dr).

Senecio Crawfordii Britton.

(*S. Balsamitae,* var. *Crawfordii* of Gray's Manual, ed. 7.)

Damp meadows and bogs near the Delaware River; not common.

Tullytown (F) (C) (M); Emilie (L).

***Arctium minus** (Hill) Bernh. Common Burdock.

A weed of roadsides and waste places; common.

Durham Furnace (B); Sellersville (F); Blooming Glen (L); Doylestown (Me); Bristol (B).

***Echinops sphaerocephalus** L. Globe Thistle.

Along an alley drive-way, Quakertown (A, August, 1918).

***Cirsium lanceolatum** (L.) Hill. Common or Bull Thistle.

(*Carduus lanceolatus* of Fretz's Flora.)

Pastures, fields and waste places; frequent.

Monroe (R–R); Pleasant Valley (B); Sellersville (F); Telford (B); Doylestown (Me); Neshaminy (Mc).

Cirsium discolor (Muhl.) Spreng.

(*Carduus discolor* of Fretz's Flora.)

Roadsides, fields and banks; frequent.

Monroe (R–R); Sellersville (F); Bedminster (Mo); Lumberville (L); Brownsburg (B); Yardley (Me); Tullytown (B).

Cirsium altissimum (L.) Spreng.

(*Carduus altissimus* of Fretz's Flora.)

Fields and thickets; occasional.

Wyker's Island (R–R); Harr's Dam, near Sellersville (F, August 27, 1887); (Plumstead).

Cirsium muticum Michx. Swamp Thistle.

(*Carduus muticus* of Fretz's Flora.)

Moist situations; frequent.

Revere (L); Finland (L); Rockhill Station (B); Sellersville (F); Oxford Valley (B).

Cirsium pumilum (Nutt.) Spreng. PASTURE THISTLE.

(*Carduus odoratus* of Fretz's Flora.)

Dry fields and pastures; infrequent.

Monroe (R–R); Rocky Ridge (L); Rockhill (F); Almont (B).

***Cirsium arvense** (L.) Scop. CANADA THISTLE.

(*Carduus arvensis* of Fretz's Flora.)

Roadsides, fields and waste places; frequent.

Sellersville (F); Neshaminy (Mc).

The var. *vestitum* Wimm. and Grab. with the leaves permanently white-lanate beneath was found at Danboro (L), and the var. *integrifolium* Wimm. and Grab. with the leaves mostly plane and uncut or the lowest slightly pinnatifid was found at Neshaminy (Mc).

***Centaurea Calcitrapa** L. STAR THISTLE.

Waste places; rare.

Tullytown (F, May 30, 1899) (J, August 1, 1899).

***Centaurea Jacea** L.

Grassy fields and waste ground; rare.

Nockamixon (Fo); Sellersville (F).

***Centaurea maculosa** Lam.

Roadsides and waste places; rare.

Beaver Creek (B); New Hope (B).

***Centaurea vochinensis** Bernh.

Dry open soil, Tullytown (B, September 7, 1928).

***Hypochaeris radiata** L. CAT'S EAR.

Well established along a roadside bank, Eddington (L, July 1, 1931).

***Lapsana communis** L. NIPPLEWORT.

Waste ground, Rocky Ridge (B, September 18, 1926).

***Cichorium Intybus** L. CHICORY.

Fields, roadsides and waste places; common.

Nockamixon (Ba); Ottsville (L); California (Wi); Sellersville (F); Doylestown (Me); Yardley (Me).

Krigia virginica (L.) Willd.

(*Adopogon carolinianum* of Fretz's Flora.)

Dry sandy or gravelly soil; frequent.

Nockamixon (M); Rockhill (F); Doylestown (Me); Lahaska (L); Bristol (B); Tullytown (L).

Cynthia virginica D. Don. CYNTHIA.

(*Krigia amplexicaulis* Nutt. of Gray's Manual, ed. 7. *Adopogon virginicum* of Fretz's Flora.) Rhodora, xvii. 135 (1915).

Moist woods, banks and meadows; common.

Uhlertown (Me); Richlandtown (Me); Steinsburg (Wi); Rockhill (M); Perkasie (M); Sellersville (F); Lahaska (L); Aquetong (L); Neshaminy (Mc); Tullytown (M); Bristol (Dr).

***Tragopogon porrifolius** L. SALSIFY. OYSTER PLANT.

Roadsides and waste places; occasional as a garden escape.

Doylestown (L); Tullytown (F); (Sellersville).

***Tragopogon pratensis** L. GOAT'S BEARD.

Roadside bank, Blooming Glen (B, May 30, 1923).

***Taraxacum officinale** Weber. COMMON DANDELION.

(*Taraxacum Taraxacum* of authors.)

Woods, lawns, fields, pastures and waste places; common.

Bursonville (L); Richlandtown (L); Doylestown (Me); Neshaminy (Mc); Penns Park (L); Fallsington (B).

***Taraxacum laevigatum** (Willd.) DC. RED-SEEDED DANDELION.

(*T. erythrospermum* of Gray's Manual, ed. 7.) Bot. Gaz. lxx, 350 (1920).

Similar situations as preceding species but much less common.

Deep Run (F); Warrington (L); New Hope (Sg).

***Sonchus uliginosus** Bieb.

Torreya, xxii. 92 (1922).

Old fields, roadsides and waste places; becoming frequent.

Pleasant Valley (B); Quakertown (Wi); Steinsburg (Wi); Telford (B); Fallsington (L); Tullytown (B); Cornwell (B); Andalusia (Dr).

Adventive from southeastern Europe.

***Sonchus oleraceus** L. Common Sow Thistle.

Cultivated ground and waste places; frequent.

Durham Furnace (R–R); Ottsville (L); Sellersville (F); Neshaminy (Mc).

Sonchus asper (L.) Hill. Spiny-leaved Sow Thistle.

Roadsides and waste places; occasional.

Buckingham Station (F); Neshaminy (Mc); Bristol (B).

***Lactuca scariola** L. Prickly Lettuce.

Waste places and railroad ballast; frequent.

Springtown (L); Perkasie (F); Tullytown (B).

***Lactuca scariola** L., var. **integrata** Gren. & Godr.

(*L. virosa* of American authors.)

Similar situations; frequent.

Durham Furnace (R–R); Perkasie (B); Sellersville (F).

Lactuca canadensis L. Wild Lettuce.

(*L. canadensis* of Gray's Manual, ed. 7, in part.)

For a revision of this species and its varieties, some of which follow in this list, see Rhodora, xxii. 9–11 (1920).

Edge of woods, clearings and thickets; rare; more common northward.

Monroe (R–R); Sellersville (F).

Lactuca canadensis L., var. **latifolia** O. Kuntze.

(*L. canadensis* of Gray's Manual, ed. 7, in part.)

Similar situations as preceding; common.

Pleasant Valley (B); Shelly (F); Perkasie (F); Almont (F); Neshaminy (Mc); Brownsburg (B); Bristol (Dr).

Lactuca canadensis L., var. **integrifolia** (Bigel.) Gray.

(*L. canadensis,* var. *montana* of Gray's Manual, ed. 7, and *L. sagittifolia* Ell.)

Clearings, thickets and open woods; occasional.

Buckwampum Mountain (L); Almont (F); Sellersville (B); Point Pleasant (F); (Solebury).

[**Lactuca hirsuta** Muhl.

A rare plant within the Philadelphia area. It usually occurs near the coast and southward. There is a Sellersville record but no material was found.]

Lactuca villosa Jacq.

Thickets and borders of woods; infrequent.

Point Pleasant (L); Brownsburg (L).

Lactuca floridana (L.) Gaertn.

Rich soil in moist open places; occasional.

Pipersville (F); Point Pleasant (F); Grenoble (L); (Argus).

Lactuca spicata (Lam.) Hitchc. BLUE LETTUCE.

Low open ground and thickets; common.

Upper Black Eddy (Tr–P); Ottsville (L); Lumberville (L); Aquetong (L); Oxford Valley (B); Hulmeville (B); (Rockhill).

***Crepis capillaris** (L.) Wallr. HAWK'S BEARD.

Fields and waste places; occasional.

Telford (Sm); Doylestown (Me); Newtown (W. P. Adams).

***Crepis tectorum** L.

An introduced weed, Sellersville (F, June, 1888, and July 20, 1888).

Prenanthes alba L. WHITE LETTUCE. RATTLESNAKE ROOT.

(*Nabalus albus* L.)

Somewhat damp open woods and thickets; frequent except on the Coastal Plain.

Monroe (R–R); Quakertown (F); Rockhill (M) (F); Argus (K); Point Pleasant (B); Doylestown (Mc); Brownsburg (L).

Prenanthes serpentaria Pursh. LION'S FOOT.

(*Nabalus serpentarius* of authors.)

Mine Hill, Durham Township (R–R).

A specimen was found labelled "Bucks County." No date

and no definite locality are given. The specimen has an I. C. Martindale label but Dr. I. S. Moyer is named as the collector. In Dr. Moyer's catalogue he reports it from "Barrens near Point Pleasant." It seems quite obvious that this is the station from which this specimen came.

Prenanthes trifoliata (Cass.) Fernald. GALL-OF-THE-EARTH.

(*Nabalus trifoliatus* Cass.)

Woods and thickets usually in damp sandy or gravelly soil; frequent.

Narrowsville (B); Haycock Mountain (B); Rockhill (B); Neshaminy (Mc); Yardley (Me); Bristol (B).

Prenanthes altissima L.

(*Nabalus altissimus* of authors.)

Rich moist woods of the upper districts; occasional.

Buckwampum Mountain (R–R); Ottsville (B); Rockhill (M) (F); Argus (K); Lumberville (L); Grier's Corner (Gr); Penns Park (L).

***Hieracium pilosella** L., **var. viride** Ser.

Sandy soil, Fallsington (Dr, June 20, 1926).

***Hieracium aurantiacum** L. ORANGE HAWKWEED. DEVIL'S PAINT BRUSH.

Fields, pastures and waste places; rare.

Upper Black Eddy (Tr–P); Gardenville (L); Neshaminy (Mc).

***Hieracium pratense** Tausch. KING DEVIL.

Similar situations as preceding species; common.

Upper Black Eddy (T); Uhlertown (Me); Buckwampum Mountain (L); Pleasant Valley (L); Spinnerstown (L); Rockhill (B); Almont (L); Sellersville (B) (F); Gardenville (L); Neshaminy (Mc); New Hope (B); Yardley (L); Fallsington (Dr); Bristol (L).

***Hieracium florentinum** All.

A weed in open sterile soil, Tullytown (L, May 24, 1930).

Hieracium venosum L. RATTLESNAKE WEED.

Dry open woods and thickets; common.

Monroe (R–R); Revere (L); Rockhill (F); Perkasie (F); Bedminster Township (Kr); Point Pleasant (L); Doylestown (Me); Neshaminy (Mc); Aquetong (K); Lahaska (L).

Hieracium paniculatum L.

Dry open woods and thickets; frequent.

Monroe (R–R); Upper Black Eddy (Tr–P); Pleasant Valley (B); Sellersville (F); Doylestown (Me); Center Bridge (Fi); Tullytown (B); Newportville (L).

Hieracium marianum Willd.

Woods and thickets; rare.

Perkasie (F, June 17, 1899); (Springfield).

Hieracium scabrum Michx.

Woods, pastures and dry banks; frequent.

Buckwampum Mountain (R–R); Haycock Mountain (Mc); Perkasie (B); Argus (F); Doylestown (Me); Furlong (L); Yardley (Me); Bristol (B).

Hieracium Gronovii L.

Dry soil; frequent.

Monroe (R–R); Pleasant Valley (B); Finland (L); Rockhill (F); Plumsteadville (Dr); Roelofs (L).

[Hieracium canadense Michx.

A northern species reported from Riegelsville. No material was found to cover this record.]

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INDEX

Synonyms are in *italics*. No references are made here to names in general discussion.

Abutilon 216
Acalypha 208
Acanthaceae 275
Acanthus Family ... 275
Acer 213
Aceraceae 213
Acerates 250
Achillea 303
Acnida 152
Acorus 114
Actaea 164
Adam-and-Eve 131
Adder's Mouth 130
Adder's Tongue 49
  Family 49
  Yellow 121
Adiantum 43
Adlumia 167
Adopogon 308
Aethusa 235
Agalinis 272
Agastache 257
Agrimonia 191
Agrimony 191
  Soft 191
Agropyron 66
Agrostemma 155
Agrostis 70
Ailanthus 206
Aira 69
Aizoaceae 153
Alder, Black 212
  Smooth 138
Aletris 124
Alfalfa 197
Alisma 58
Alismaceae 58
Allionia 152
Allium 120
Alnus 138
Alopecurus 72
Althaea 217
Alum Root 176
Alyssum, Sweet 168
Amaranth 151
  Family 151
  Green 151
  Thorny 152
Amaranthaceae 151
Amaranthus 151
Amaryllidaceae 125
Amaryllis Family ... 125
Ambrosia 298
Amelanchier 180
Amianthium 119
Amorpha 198
Amphicarpa 203
Amygdalus 195
Anacardiaceae 211
Anagallis 244
Anaphalis 297
Andromeda, Privet 241
Andropogon 84
Anemone 162
  Rue 162
  Wood 162
Anemonella 162
Angelica 236
Anonaceae 164
Antennaria 296
Anthemis 303
Anthoxanthum 75
Anychia 153
Apios 202
Aplectrum 131
Apocynaceae 248
Apocynum 248
Apple 180
  Wild Balsam 283
Aquifoliaceae 212
Aquilegia 163
Arabis 173
Araceae 114
Aralia 231
Araliaceae 231
Arctium 306
Arctostaphylos 241
Arenaria 154
Argemone 167
Arisaema 114
Aristida 74
Aristolochia 145
Aristolochiaceae 145
Armoracia 171
Arrhenatherum 69
Arrow Grass Family 57
Arrow-head 58
Arrow-leaf 58
Arrow-wood 281
Artemisia 304
Artichoke, Jerusalem 301
Arum, Arrow 114
  Family 114
Asarum 145
Asclepiadaceae 248
Asclepias 248
Ascyrum 218
Ash, Black 245
  Prickly 206
  Red 245
  White 244
Asimina 164
Asparagus 122
Aspen, American 134
  Large-toothed 134
Asperella 67
Aspidium 46
Asplenium 44, *45*
Aster 291
  acuminatus 295
  amethystinus 293
  Claytoni 291
  cardifolius 292
  divaricatus 291
  dumosus 293
  ericoides 293
  infirmus 295
  laevis 293
  lateriflorus 294
  linariifolius 295
  Lowrieanus 292
  macrophyllus 291
  multiflorus 293
  nova-angliae 291
  nova-belgii 294
  paniculatus 294
  patens 292
  phlogifolius 292
  prenanthoides 294
  puniceus 294
  radula 291

sagittifolius 293
salicifolius 294
Shreberi 291
Tradescanti 294
umbellatus 295
undulatus 292
vimineus 293
Aster, Heath 293
Golden 287
New England 291
Smooth 293
Starved 294
White-topped 296
White Wood 291
Athyrium 45
Atragene 163
Atriplex 151
Aureolaria 272
Avena 69
Avens, Rough 188
White 188
Yellow 188
Azalea 239

Balm 260
Balm, Basil 259
Bee 259
Horse 263
Balm of Gilead 135
Balsam Apple, Wild 283
Balsaminaceae 215
Baneberry, White ... 164
Baptisia 195
Barbarea 172
Barberry, Family ... 165
Common 165
Bartonia 247
Basil 260
Basswood 216
Batrachium 159
Bayberry 135
Bean, Wild 203
Bearberry 241
Beard Tongue 267
Bedstraw, Northern 277
Sweet-scented 278
Yellow 277
Beech 138
Blue 137
Family 138
Water 137
Beechdrops 275
Beggar Ticks 301
Belamcandra 126
Bellflower 283
Marsh 284
Tall 284
Bellwort, Sessile 120
Perfoliate 120
Benzoin 166
Berberidaceae 165
Berberis 165
Bergamot 259
Betony, Wood 274
Betula 137
Betulaceae 137
Bidens 301
Bignoniaceae 275
Bignonia Family ... 275
Bindweed, Black ... 149
Field 251
Hedge 251
Birch Family 137
Gray 138
River 138
Sweet 137
Yellow 138
White 138
Bird's Eye 270
Birthwort Family ... 145
Bishop's Cap 176
Bitternut 136
Bittersweet, Climbing 213
European 263
Blackberry 189
Sand 190
Black-eyed Susan ... 299
Bladder Nut, American 213
Family 213
Bladderwort, Family 274
Great 274
Blephariglottis 128
Blite, Strawberry ... 150
Blitum 150
Bloodroot 166
Bluebell 284
Bluebell Family 283
Blueberry, High 242
Low 242
Blue Curls 256
Blue Hearts 273
Bluets 278
Blueweed 255
Boehmeria 144
Boneset 286
Upland 286
Borage Family 253
Boraginaceae 253
Botrychium 49
Bouncing Bet 157
Brachyelytrum 73
Brake, Cliff 43
Brake, Common 43
Brasenia 158
Brassica 169
Brier, Green 124
Saw 124
Brome-grass 60
Bromus 60
Brooklime, American 270
Broom-rape 275
Broom-rape Family 275
Broussonetia 143
Buchnera 273
Buckbean 247
Buckthorn Family... 215
Buckwheat 149
Climbing False ... 149
Family 145
Bugle Weed 262
Bulrush, Great 89
Bunch-flower 120
Bupleurum 235
Bur, Buffalo 264
Burdock, Common... 306
Burnet, Canadian ... 192
Garden 192
Burning Bush 212
Bur Reed, Family... 55
Giant 55
Bush Clover, Trailing 200
Butter and Eggs..... 266
Butterbur 305
Buttercup, Bristly 161
Bulbous 161
Creeping 161
Tall 161
Swamp 160
Butterfly Weed 248
Butternut 136
Buttonbush 278
Button Weed 278
Buttonwood 178

Cabbage 170
Skunk 114
Cacalia 305
Calamagrostis 70
Calamus 114
Calico Bush 240
Callirhoe 218
Callitrichaceae 210
Callitriche 210

Calopogon 129
Caltha 163
Camelina 169
Camomile, Corn 303
German 304
Campanula 283
Campanulaceae 283
Campion, Starry 156
White 156
Camptosorus 45
Cancer Root 275
Cannabis 142
Caper Family 174
Capparidaceae 174
Caprifoliaceae 279
Capsella 169
Cardamine 173
Cardinal Flower 284
Carduus 306
Carex 92
abdita 101
abscondita 103
acuta 110
aggregata 93
alata 100
albicans 101
albolutescens 99
albursina 103
anceps 104
angustior 97
annectens 94
amphibola 106
arctata 107
Asa-Grayi 113
atlantica 96
Bebbii 98
Bicknellii 100
blanda 104
brachyglossa 94
brevior 98
bromoides 96
bullata 112
Bushii 108
Buxbaumii 109
canescens 95
caroliniana 108
cephalantha 97
cephaloidea 94
cephalophora 94
communis 101
comosa 113
conjuncta 94
conoidea 106
convoluta 92
costellata 108
crinita 110
cristata 97
cristatella 97
Davisii 107
debilis 107
digitalis 103
Emoryi 110
festucacea 99
filiformis 111
flexuosa 107
foenea 98
folliculata 112
fusca 109
glaucodea 106
Goodenowii 110
Goodenowii 110
gracilescens 105
gracillima 106
granularis 105
Grayi 113
grisea 106
gynandra 111
Haydeni 110
heterosperma 104
hirsutella 108
hirta 111
hirtifolia 102
Hitchcockiana 106
hormanthodes 99
Howei 96
hystracina 113
incomperta 97
interior 96
intumescens 113
Jamesii 100
lacustris 111
laevivaginata 95
lanuginosa 111
lasiocarpa 111
laxiculmis 103
laxiflora 105
leptalea 100
leptonervia 104
limosa 109
Longii 99
longirostris 107
lupuliformis 113
lupulina 113
lurida 112
Meadii 102
mirabilis 98
monile 112
Muhlenbergia 93
nigro-marginata 100
normalis 98
oligocarpa 106
pallescens 109
pedicellata 101
pedunculata 102
pennsylvanica 100
plana 93
plantaginea 103
platyphylla 103
polygama 109
polymorpha 102
prasina 107
ptychocarpa 103
pubescens 102
radiata 93
retroflexa 92
retrorsa 112
Richii 99
riparia 111
rosaeoides 96
rosea 92
rostrata 112
rugosperma 101
scabrata 109
scirpoides 96
scoparia 98
seorsa 96
setacea 94
Shriveri 105
sparganioides 94
Sprengelii 107
squarrosa 113
stellulata 97
sterilis 96, *97*
stipata 95
straminea 99
striatula 105
stricta 109
strictior 109
styloflexa 105
Swanii 108
tenera 99
tetanica 102
tonsa 102
torta 110
tribuloides 97
triceps 108
trichocarpa 111
uberior 95
umbellata 101
utriculata 112
varia 101
vesicaria 112
vestita 111
virescens 108
vulpinoidea 94
Willdenowii 100
xanthocarpa 94
Carpet Weed 153

Carpet Weed Family ... 153
Carrion Flower ... 124
Carrot ... 236
Carpinus ... 137
Carum ... 234
Carya ... 136
Caryophyllaceae ... 153
Cashew Family ... 211
Cassia ... 195
Castalia ... 158
Castanea ... 138
Castilleja ... 273
Catalpa ... 275
Catchfly, Sleepy ... 156
Sweet William ... 156
Catgut ... 198
Catnip ... 257
Cat's Ear ... 307
Cat-tail, Common ... 55
Family ... 55
Caulophyllum ... 165
Ceanothus ... 215
Cedar, Red ... 54
White ... 54
Celandine ... 166
Celastraceae ... 212
Celastrus ... 213
Celtis ... 142
Cenchrus ... 84
Centaurea ... 307
Cephalanthus ... 278
Cerastium ... 155
Ceratophyllaceae ... 158
Ceratophyllum ... 158
Cercis ... 195
Chaenorrhinum ... 266
Chaerophyllum ... 233
Chamaecyparis ... 54
Chamaelirium ... 119
Chamaenerion ... 228
Charlock ... 169
Cheat ... 60
Checkerberry ... 241
Cheeses ... 217
Cheilanthes ... 43
Chelidonium ... 166
Chelone ... 268
Chenopodiaceae ... 149
Chenopodium ... 149
Cherry, Choke ... 193
Fire ... 194
Ground ... 264
Sand ... 194
Sour ... 194
Sweet ... 194
Wild Black ... 193
Chervil, Wild ... 233
Chess ... 60
Chess, Wild ... 61
Chestnut ... 138
Chickweed, Common 155
Field ... 155
Forked ... 153
Great ... 154
Marsh ... 154
Mouse-ear ... 155
Nodding ... 155
Chicory ... 308
Chimaphila ... 238
Chokeberry ... 180
Black ... 180
Christmas Flower ... 163
Chrysanthemum ... 304
Chrysopsis ... 287
Chrosperma ... 119
Chrysosplenium ... 176
Cichorium ... 308
Cicuta ... 234
Cimicifuga ... 164
Cinna ... 72
Cinquefoil, Common 187
Silvery ... 187
Circaea ... 230
Cirsium ... 306
Cistaceae ... 220
Clammy Cuphea ... 228
Claytonia ... 157
Clearweed ... 144
Cleavers ... 276
Clematis ... 163
Purple ... 163
Cleome ... 174
Clethra ... 238
Clinopodium ... 260
Clover, Alsike ... 196
Bush ... 200
Crimson ... 196
Hop ... 197
Low Hop ... 197
Rabbit-foot ... 196
Red ... 196
White ... 196
Yellow ... 197
Club-moss Family ... 51
Cocklebur ... 298
Cohosh, Black ... 164
Blue ... 165
Colic Root ... 124
Collinsonia ... 263
Coltsfoot ... 304
Columbine, Wild ... 163
Comandra ... 144
Comfrey, Common ... 254
Wild ... 253
Commelina ... 116
Commelinaceae ... 116
Compositae ... 285
Composite Family ... 285
Cone Flower, Tall ... 300
Orange ... 300
Conium ... 234
Conopholis ... 275
Conringia ... 170
Convallaria ... 123
Convolvulaceae ... 250
Convolvulus ... 251
Corallorrhiza ... 130
Coral Root ... 130
Coreopsis ... 301
Corn Cockle ... 155
Gromwell ... 254
Salad ... 282
Squirrel ... 167
Cornaceae ... 237
Cornel, Round-leaved ... 237
Silky ... 237
Cornus ... 237
Corpse Plant ... 239
Corydalis ... 167
Corylus ... 137
Cosmos ... 301
Cotoneaster ... 185
Cotton-wood ... 135
Cowbane, Spotted ... 234
Cow-herb ... 157
Cowslip, Virginia ... 254
Crab Apple ... 180
Crab Apple, American ... 180
Cracca ... 198
Cranberry ... 242
Cranesbill, Wild ... 205
Crassulaceae ... 175
Crataegus ... 181
abjecta ... 182
alacris ... 184
apposita ... 182
arcana ... 184
arcuata ... 185
austera ... 184
Calpodendron ... 182
Canbyi ... 181
chrysocarpa ... 182
coccinea ... 185
Collinsiana ... 183
condensa ... 183

cordata 185
Crus-galli 181
cuneiformis 182
deducta 184
delicata 184
deltoides 184
digna 185
dissona 184
Dodgeii 182
firma 183
Fretzii 184
Holmesiana 184
infera 182
jejuna 184
lata 183
longipetiolata 183
macrosperma 183
micrantha 182
modica 184
monogyna 185
Moyeriana 183
nemoralis 182
opica 182
oxycantha 185
pausiaca 182
Phaenopyrum 185
philadelphica 184
populnea 184
Pringlei 185
pruinosa 184
pumila 183
punctata 182
pygmaea 182
radiosa 182
rivularis 181
roanensis 183
rufipes 183
rugosa 184
Ruthiana 184
saturata 183
saxatilis 182
scabriuscula 184
Schweinitziana 182
Smithii 185
stolonifera 184
straminea 182
structilis 182
succulenta 182
tenella 183
tomentosa 182
uniflora 185
villipes 184
Crepis 310
Cress, Bitter 173
Field 168
Marsh 171
Mouse-ear 170
Rock 173
Spring 173
Water 171
Winter 172
Yellow 171
Crotalaria 196
Crotonopsis 208
Crowfoot 159
Cursed 159
Family 159
Hooked 160
Small-flowered 160
Yellow Water 159
White Water 159
Cruciferae 168
Cryptotaenia 234
Cubelium 222
Cucumber, One Seeded Bur 283
Cucumber Root, Indian 123
Cucumis 283
Cucurbitaceae 283
Cudweed, Low 298
Culver's Root 270
Cunila 261
Cuphea, Clammy 228
Curly-grass Family 48
Currant 177
Buffalo 178
Red 177
Wild Black 177
Cuscuta 251
Custard Apple Family 164
Cut-grass, Rice 75
Cymbalaria 266
Cynodon 74
Cynoglossum 253
Cynosurus 66
Cynthia 308
Cyperaceae 85
Cyperus 85
aristatus 85
dentatus 86
diandrus 85
esculentus 86
filiculmis 86
flavescens 85
lancastrensis 86
ovularis 86
rivularis 85
strigosus 86
Cypress Vine 250
Cypripedium 127
Cystopteris 47
Cytisus 196

Dactylis 66
Daffodil 125
Daisy, Ox-eye 304
Dalibardia 191
Dame's Violet 170
Dandelion 308
Common 308
Red-seeded 308
Danthonia 70
Darnel 68
Bearded 68
Common 68
Dasystoma 272
Datura 265
Daucus 236
Dayflower 116
Decodon 227
Deerberry 242
Delphinium 164
Dennstaedtia 48
Dentaria 172
Deringa 234
Deschampsia 69
Desmodium 198
Devil's Bit 119
Dewberry 190
Diervilla 279
Dianthera 275
Dianthus 157
Dicentra 167
Dicksonia 48
Digitaria 76
Dilepyrum 73
Diodia 278
Dioscorea 125
Dioscoreaceae 125
Diospyros 244
Dipsacaceae 283
Dipsacus 283
Dirca 227
Dittany 261
Dock, Bitter 146
Butterfly 305
Patience 145
Yellow 146
Dodder, Common 251
Doellingeria 295
Dogbane 248
Family 248
Spreading 248
Dogwood 237
Family 237
Flowering 237

Draba 168
Dragon, Green 114
Dragon Head, False 258
Dropseed 73
Drosera 174
Droseraceae 174
Drymocallis 186
Dryopteris 45
Duchesnea 186
Duckweed 115
Family 115
Dulichium 87
Dusty Miller 304
Dutchman's Breeches 167

Ebenaceae 244
Ebony Family 244
Echinochloa 83
Echinocystis 283
Echinops 306
Echium 255
Eclipta 299
Eel Grass 59
Eglantine 192
Elatinaceae 220
Elatine 220
Elder, Box 214
Common 282
Red-berried 282
Elecampane 298
Eleocharis 87
acicularis 88
acuminata 88
capitata 88
diandra 87
Engelmanni 87
intermedia 88
obtusa 87
olivacea 87
palustris 87
Smallii 87
tenuis 88
Eleusine 74
Ellisia 253
Elm, American 142
Slippery 141
White 142
Elodea 59
Elymus 67
Enchanter's Nightshade 230
Epifagus 275
Epigaea 241
Epilobium 228
Epipactis 130
Equisetaceae 50
Equisetum 50
Eragrostis 64
Erechtites 305
Erianthus 84
Ericaceae 238
Erigeron 295
Eriocaulaceae 115
Eriocaulon 115
Eriophorum 90
Erodium 206
Eryngium 232
Erysimum 171
Erythronium 121
Eupatorium 285
Euphorbia 209
Euphorbiaceae 208
Euthamia 291
Evening Primrose 229
Common 229
Family 228
White 230
Everlasting 297
Common 297
Pearly 297
Plantain-leaved 297
Evonymus 212

Fagaceae 138
Fagopyrum 149
Fagus 138
Falcata 203
False Mermaid 211
Family 211
False Spikenard 122
Featherfoil 243
Fern, Beech 45
Bladder 47
Chain 44
Cinnamon 49
Climbing 48
Christmas 45
Family 43
Goldie's 46
Hairy Lip 43
Hay Scented 48
Interrupted 49
Lady 45
Marginal Shield 46
Marsh 46
New York 46
Ostrich 48
Rattlesnake 50
Royal 49
Sensitive 48
Sweet 135
Walking 45
Fescue, Meadow 62
Sheep's 61
Festuca 61
Feverfew 280, 304
Feverwort 280
Figwort 267
Family 265
Filipendula 188
Fimbristylis 88
Fireweed 228, 305
Five-finger 187
Flag, Blue 125
Slender Blue 125
Sweet 114
Yellow 126
Flowering Fern Family 49
Flax, Common 203
Family 203
Fleabane, Daisy 296
Fleur-de-lis 126
Floating Heart 247
Floerkea 211
Flower-of-an-hour 218
Flax, False 169
Yellow 204
Fly Poison 119
Forget-me-not 254
Forsythia 245
Foeniculum 235
Four-o'clock Family 152
Foxglove 272
Downy False 272
False 272
Smooth False 272
Foxtail, Floating 72
Fragaria 186
Fraxinus 244
Frog's Bit Family 59
Frostweed 220
Fumaria 167
Fumariaceae 167
Fumitory 167
Common 167
Family 167

Galinsoga 302
Galium, Aparine 276
asprellum 278
boreale 277
circaezans 277
Claytoni 277
concinnum 278

lanceolatum 277
Mollugo 277
pilosum 277
tinctorum 277
triflorum 278
verum 277
Gall-of-the-earth 311
Garlic, Field 121
Wild 120
Gaultheria 241
Gaura 230
Gaylussacia 241
Gemmingia 126
Gentian, Closed 246
Family 245
Fringed 246
Horse 280
Soapwort 246
Gentiana 246
Gentianaceae 245
Geraniaceae 205
Geranium 205
Family 205
Feather 150
Gerardia 272
Purple 272
Germander, American 255
Geum 188
Gilfola 296
Gillenia 179
Gill-over-the-ground 257
Ginger, Wild 145
Ginseng 232
Dwarf 232
Family 231
Glecoma 257
Gleditsia 195
Globeflower 163
Glyceria 62
Gnaphalium 297
Goat's Beard 308
Rue 198
Golden Alexanders 235
Golden Club 114
Goldenrod 287
Blue-stemmed 288
Early 289
Swamp 289
Golden Seal 164
Gooseberry 177
European 177
Wild 177
Goosefoot 150
Family 149
Maple-leaved 150
Oak-leaved 150
Gourd Family 283
Gramineae 60
Grape, Chicken 216
Frost 216
Northern Fox 215
River-bank 216
Summer 216
Grass, Barnyard 83
Beard 84
Bent 70
Bermuda 74
Black Oat 74
Blue-eyed 126
Brome 60
Canada Blue 63
Canary 75
Cord 74
Cotton 90
Couch 66
Crab 76
Dog's Tail 66
Family 60
Finger 76
Fowl Meadow 62
Foxtail 83
Goose 74, 276
Hair 69
Italian Rye 68
Oat 69
of Parnassus 177
Old-witch 77
Orange 220
Orchard 66
Poverty 74
Quack 66
Rattlesnake 62
Reed Canary 75
Reed Meadow 63
Rib 276
Rough-stalked Meadow 64
Squirrel-tail 68
Star 125
Sweet Vernal 75
Switch 78
Tall Redtop 66
Thin 71
Velvet 70
Water Star 117
White 75
Wool 90
Yellow-eyed 116
Yellow Nut 86
Gratiola 269
Great Willow Herb 228
Green, Christmas ... 52
Ground Nut 202
Gum, Sour 237
Gum Tree, Sweet..... 178
Gymnadeniopsis 128
Gyrostachys 129

Habenaria 127
Hackberry 142
Hackelia 254
Haloragidaceae 231
Hamamelidaceae ... 178
Hamamelis 178
Hardhack 179
Harebell 284
Hartmannia 230
Haw, Black 282
Hawk's Beard 310
Hawkweed, Orange 311
Hawthorn, English 185
Hazelnut 137
Beaked 137
Heal-all 257
Heart's-ease 226
Heath Family 238
Hedeoma 260
Helenium 303
Heleochloa 73
Helianthemum 220
Helianthus 300
Heliopsis 299
Heliotropium 253
Hellebore, American White 120
Green 163
Helleborus 163
Hemerocallis 121
Hemianthus 268
Hemicarpha 91
Hemlock 54
Ground 53
Poison 234
Water 234
Hemp 142
Indian 248
Hempweed, Climbing 287
Henbane 265
Henbit 258
Hepatica 162
Heracleum 236
Herb Robert 205
Hesperis 170
Heteranthera 117
Heuchera 176
Hibiscus 218

Hicoria 136
Hickory 136
Pignut 136
Shag-bark 136
Hieracium 311
Hog Peanut 203
Holcus 70
Holly, American 212
Family 212
Hollyhock 217
Honesty 172
Honewort 234
Honeysuckle 279
Bush 279
Family 279
Japanese 279
Trumpet 279
Hop, Common 142
Hornbeam 137
Tree 206
Hordeum 68
Horehound 257
Water 262
Hornwort 158
Family 158
Horseradish 171
Horsetail, Common 50
Horse Weed 296
Hottonia 243
Hound's Tongue 253
Houstonia 278
Huckleberry, Black 241
Squaw 242
Humulus 142
Hyacinth, Grape 122
Hybanthus 222
Hydrangea 177
Wild 177
Hydrastis 164
Hydrocharitaceae 59
Hydrocotyle 233
Hydrophyllaceae 253
Hydrophyllum 253
Hyoscyamus 265
Hypericaceae 218
Hypericum 218
Hypochaeris 307
Hypopitys 239
Hypoxis 125
Hyssop 260
Giant 257
Hyssopus 260
Hystrix 67
Ilex 212
Illecebraceae 153
Ilysanthes 269
Impatiens 215
Indian Hemp 248
Pipe 239
Physic 179
Indigo, False 198
Wild 195
Inkberry 212
Inula 298
Ionactis 295
Ipomoea 250
Iridaceae 125
Iris 125
Family 125
Ironweed 285
Isanthus 255
Isnardia 228
Isoetaceae 53
Isoetes 53
Isotria 129
Ivy, Ground 257
Kenilworth 266
Poison 212

Jack-in-the-pulpit 114
Jeffersonia 165
Jimson Weed 265
Joe Pye Weed 285
Judas Tree 195
Juglandaceae 136
Juglans 136
Juncaceae 117
Juncaginaceae 57
Juncoides 119
Juncus 117
Juniper, Common 54
Juniperus 54

Kalmia 240
Kickxia 266
King Devil 311
King Nut 136
Kinnikinnik 237
Knawel 153
Kneiffia 229
Knotweed 146
Family 153
Japanese 149
Koellia 260
Koniga 168
Krigia 308

Labiatae 255
Lacinaria 287
Lactuca 309
Lady's Slipper, Yellow 127
Lady's Thumb 148
Ladies' Tresses 130
Slender 129
Lambkill 240
Lamb's Quarters 150
Lamium 258
Laportea 143
Lappula 254
Lapsana 307
Larkspur 164
Lathyrus 202
Lauraceae 166
Laurel, Family 166
Great 240
Mountain 240
Sheep 240
Leatherwood 227
Lechea 221
Leek, Wild 120
Leersia 75
Leguminosae 195
Lemna 115
Lemnaceae 115
Lentibulariaceae 274
Leonurus 258
Lepidium 168
Leptamnium 275
Leptandra 270
Leptilon 296
Lespedeza 200
Lettuce, Blue 310
Prickly 309
White 310
Wild 309
Leucothoe 240
Liatris 287
Licorice, Wild 277
Ligustrum 245
Lilac 245
Liliaceae 119
Lilium 121
Lily, Blackberry 126
Day 121
Family 119
Meadow 121
Sweet Water 158
Tiger 121
Turk's-cap 121
White Water 158
Wood 121
Yellow Pond 158
Lily-of-the-Valley 123
False 123
Limnanthaceae 211
Limnanthemum 247
Limodorum 129

Limosella 268
Linaceae 203
Linaria 266
Linden 216
  Family 216
Linum 203
Lion's Foot 310
Liparis 131
Liquidambar 178
Liriodendron 164
Lithospermum 254
Live-forever 175
Liverleaf 162
Lizard's Tail 131
Lobelia 284
  Family 284
  Great 284
Lobeliaceae 284
Lobularia 168
Locust, Black 198
  Honey 195
Lolium 68
Lonicera 279
Loosestrife 243
  Family 227
  Fringed 244
  Spiked 227
Lopseed 276
  Family 276
Loranthaceae 144
Lotus 198
Lousewort 274
Ludvigia 228
Lunaria 172
Lupine, Wild 196
Lupinus 196
Luzula 119
Lychnis 156
Lycium 265
Lycopersicon 265
Lycopodiaceae 51
Lycopodium 51
Lycopus 262
Lygodium 48
Lyonia 240
Lysimachia 243
Lythraceae 227
Lythrum 227

Maclura 143
Madder Family 276
Magnolia 164
  Family 164
  Laurel 164
Magnoliaceae 164
Maianthemum 123
Malaxis 130
Mallow, Common 217
  Family 216
  Rose 218
Malus 180
Malva 217
Malvaceae 216
Mandrake 165
Man-of-the-Earth 251
Maple 213
  Black Sugar 214
  Family 213
  Mountain 213
  Norway 214
  Red 214
  Silver 214
  Striped 213
  Sugar 214
Marigold, Marsh 163
Marrubium 257
Martynia 275
  Family 275
Martyniaceae 275
Matricaria 304
Matrimony Vine 265
May Apple 165
Mayflower 241
Mayweed 303
Meadow Beauty 228
Meadow Rue 161
  Early 161
  Tall 162
Meadow-sweet 179
Medeola 123
Medicago 197
Medick, Black 197
Meibomia 199
Melampyrum 273
Melanthium 120
Melastoma Family 228
Melastomaceae 228
Melilotus 197
Melissa 260
Menispermaceae 165
Menispermum 165
Mentha 262
Menyanthes 247
Mercury, Three-seeded 208
Mermaid, False 211
  False, Family 211
  Weed 231
Mertensia 254
Mesadenia 305
Mezereum Family 227
Micranthemum 268
Micrampelis 283
Microstylis 130
Mignonette Family 174
Mikania 287
Milfoil 303
Miller, Dusty 304
Millet 84
Milkweed 249
  Common 249
  Family 248
  Green 250
  Poke 249
  Purple 249
  Swamp 249
  Whorled 250
Milkwort 207
  Cross-leaved 207
  Family 207
  Orange 208
  Purple 207
Mimulus 268
Mint, Family 255
  Hoary Mountain 261
  Mountain 260
  Woolly 262
Miscanthus 84
Mistletoe 144
  Family 144
Mitchella 278
Mitella 176
Miterwort 176
Moccasin Flower 127
Mocker Nut 136
Moehringia 154
Mollugo 153
Monarda 259
Moneywort 243
Monkey Flower 268
Monotropa 239
Moonseed 165
  Family 165
Morning Glory 250
  Common 250
  Family 250
  Ivy-leaved 250
Morus 143
Moss Pink 252
Motherwort 258
Mud Plantain 117
Mudwort 268
Muhlenbergia 72
Mulberry 143
  Paper 143
  Red 143
  White 143
Mullein, Common 265

Moth 265
White 265
Muscari 122
Muskmelon 283
Mustard, Black 170
Family 168
Hedge 170
Tower 174
Treacle 170
Tumble 170
Worm-seed 171
Myosotis 254
Myrica 135
Myricaceae 135
Myriophyllum 231

Nabalus 310
Najadaceae 55
Najas 57
Nannyberry 281
Narcissus 125
Poet's 125
Nasturtium 171
Nepeta 257
Nettle, False 144
Family 141
Horse 264
Spotted Dead 258
Stinging 143
Wood 143
New Jersey Tea 215
Nicandra 264
Nightshade, Common 264
Enchanter's 230
Family 263
Nimble Will 73
Nine-bark 178
Nipplewort 307
Nut, Ground 202
Nyctoginaceae 152
Nymphaceae 158
Nymphaea 158
Nymphoides 247
Nymphozanthus 158
Nyssa 237

Oak, Bear 141
Black Jack 141
Chestnut 139
Jerusalem 150
Mossy Cup 139
Pin 140
Post 139
Red 139
Scarlet 140
Spanish 141
Swamp White 139
White 139
Willow 141
Oakesia 120
Oats 69
Obolaria 247
Oenothera 229
Old Woman 304
Oleaceae 244
Olive Family 244
Onagra 229
Onagraceae 228
Onoclea 48
Onosmodium 255
Ophioglossaceae 49
Ophioglossum 49
Opulaster 178
Orache, Spreading 151
Orange Grass 220
Mock 177
Osage 143
Orchis 127
Purple Fringed 128
Ragged Fringed 128
Showy 127
Yellow Fringed 128
Orchid Family 127
Orchidaceae 127
Origanum 260
Ornithogalum 122
Orobanchaceae 275
Orobanche 275
Orontium 114
Orpine Family 175
Oryzopsis 74
Osage Orange 220
Osmorhiza 233
Osmunda 49
Osmundaceae 49
Ostrya 137
Oxalidaceae 204
Oxalis 204
Ox-eye 299
Oxybaphus 152
Oxycoccus 242
Oxypolis 236
Oyster Plant 308

Paint Brush, Devil's 311
Painted Cup, Scarlet 273
Panax 232
Panicum 77
agrostoides 78
albemarlense 81
anceps 78
annulum 80
Ashei 82
barbulatum 79, 80
Boscii 82
capillare 77
clandestinum 82
commutatum 81
decoloratum 82
depauperatum 79
dichotomoflorum 78
dichotomum 79
flexile 77
Gattingeri 77
huachucae 80
lanuginosum 81
latifolium 82
Lindheimeri 80
linearifolium 79
longifolium 78
longiligulatum 81
lucidum 79
macrocarpon 82
microcarpon 80
nitidum 80
philadelphicum 77
polyanthes 81
Porterianum 82
proliferum 78
pubifolium 82
rostratum 78
Scribnerianum 82
sphaerocarpon 81
stipitatum 78
tennesseense 80
unciphyllum 80
verrucosum 77
virgatum 78
Werneri 79
xanthophysum 82
Yadkinense 79
Pansy 226
Wild 227
Papaver 166
Papaveraceae 166
Papaw 164
Parietaria 144
Parnassia 177
Parsley, Family 232
Fool's 235
Parsnip, Cow 236
Meadow 235
Water 234
Parthenocissus 215
Partridge Berry 278

Partridge Pea 195
Paspalum 76
Pastinaca 236
Peach 195
Pear 179
Pearlwort 154
Pedicularis 274
Pellaea 43
Pellitary 144
Peltandra 114
Pencil Flower 201
Penny Cress 168
Pennyroyal, American 260
False 255
Pennywort 247
Water 233
Penstemon 267
Penthorum 175
Pentstemon 267
Pepper Family 131
Pepperbush, Sweet 238
Peppergrass, Wild 168
Peppermint 263
Peramium 130
Perilla 263
Periwinkle 248
Persimmon 244
Petasites 305
Petunia 265
Phacelia 253
Phalaris 75
Phaseolus 203
Phegopteris 45
Philadelphus 177
Phleum 72
Phlox 252
Downy 252
Family 252
Garden 252
Phoradendron 144
Phryma 276
Phrymaceae 276
Physalis 264
Physalodes 264
Physocarpus 178
Physostegia 258
Phytolacca 152
Phytolaccaceae 152
Pickerel-weed 116
Family 116
Pieris 240
Pigweed 151
Pilea 144
Pimpernel 235
False 269
Scarlet 244
Water 243
Pimpinella 235
Pinaceae 54
Pine Family 54
Ground 52
Pitch 54
Running 52
Scrub 54
White 54
Pineapple Weed 304
Pinesap 239
Pink, Deptford 157
Family 153
Moss 252
Mullein 156
Pinus 54
Pinweed 221
Beach 221
Pinxter Flower 239
Piperaceae 131
Pipewort Family ... 115
Pipsissewa 238
Plane Tree Family 178
Plantaginaceae 276
Plantago 276
Plantain 276
Family 276
Indian 305
Mud 117
Rattlesnake 130
Robin's 295
Platanaceae 178
Platanus 178
Pleurisy-root 248
Pluchea 296
Plum, Beach 194
Garden 194
Wild 194
Poa 63
Podophyllum 165
Podostemaceae 175
Podostemum 175
Pogonia 129
Nodding 129
Rose 129
Pokeweed 152
Family 152
Polemoniaceae 252
Polemonium 252
Polycodium 242
Polygala 207
Polygalaceae 207
Polygonaceae 145
Polygonatum 123
Polygonum 146
Polypodiaceae 43
Polypodium 43
Polypody 43
Polypogon 72
Polystichum 45
Pond Lily 158
Small 158
Yellow 158
Pondweed Family ... 55
Pontederia 116
Pontederiaceae 116
Poor Man's Weatherglass 244
Poplar 134
Lombardy 135
White 134
Poppy, Common 166
Family 166
Mexican 167
Populus 134
Porterantherus 179
Portulaca 157
Garden 157
Portulacaceae 157
Potamogeton 55
Potentilla 186
Prenanthes 310
Primrose Family ... 243
Primulaceae 243
Prince's Feather ... 148
Privet 245
Proserpinaca 231
Prunella 258
Prunus 193
Psedera 215
Ptelea 206
Pteretis 48
Pteridium 43
Pteris 43
Ptilimnium 234
Pulse Family 195
Purslane, Common 157
Family 157
Milk 209
Water 228
Pussy's Toes 297
Puttyroot 131
Pycnanthemum 260
Pyrola 238
Pyrus 179

Quassia Family 206
Queen of the Prairie 188
Quillwort Family..... 53
Quercitron 140
Quercus 139

Radicula 171
Radish 169
Wild 169
Ragweed, Great 298
Ragwort, Golden 305
Ranunculaceae 159
Ranunculus 159
Rape 170
Raphanus 169
Raspberry, Black 189
Dwarf 189
Purple Flowering 189
Red 188
Rattle-box 196
Rattlesnake Root 310
Rattlesnake Weed 311
Redbud 195
Reseda 174
Resedaceae 174
Rhamnaceae 215
Rhexia 228
Rhododendron 239
Rhus 211
Ribes 177
Rice, Wild 75
Richweed 144
Riverweed 175
Family 175
Robinia 198
Rock Rose Family 220
Roripa 171
Rosa 192
Rosaceae 178
Rose, Dog 192
Dwarf 192
Family 178
Rose of Sharon 218
Roseroot 175
Rotala 227
Rubiaceae 276
Rubus 188
allegheniensis 189
americanus 189
argutus 189
Baileyanus 191
cuneifolius 190
flagellaris 190
frondosus 189
hispidus 190
idaeus 188
lacustris 190
nigricans 190
nigrobaccus 189
occidentalis 189
odoratus 189
phoenicolasius 189
procumbens 190
pubescens 189
Randii 190
setosus 190
strigosus 188
tardatus 190
triflorus 189
villosus 190
Rudbeckia 299
Rue Family 206
Rumex 145
Rush, Beak 91
Family 117
Forked 117
Path 117
Scouring 51
Spike 87
Toad 117
Wood 119
Rutabaga 170
Rutaceae 206
Rye 66
Wild 67
Rynchospora 91

Sabatia 245
Sage, Lyre-leaved 259
Sagina 154
Sagittaria 58
St. Andrew's Cross 218
St. John's-wort 218
Common 218
Family 218
Great 218
Marsh 220
Shrubby 219
Spotted 219
St. Peter's-wort 218
Salicaceae 131
Salix 131
Salsify 308
Salsola 151
Salvia 259
Sambucus 282
Samolus 243
Sandalwood Family 144
Sandbur 84
Sandwort, Rock 154
Thyme-leaved 154
Sanguinaria 166
Sanguisorbia 192
Sanicle 232
Sanicula 232
Santalaceae 144
Saponaria 157
Sarothra 220
Sarsaparilla, Wild 231
Sassafras 166
Satureja 260
Saururus 131
Saxifraga 176
Saxifragaceae 176
Saxifrage, Early 176
Family 176
Golden 176
Swamp 176
Scheuchzeria 57
Schizaeaceae 48
Scirpus 88
Scleranthus 153
Scleria 91
Scorpion Grass 254
Scrophularia 267
Scrophulariaceae 265
Scutellaria 256
Secale 66
Sedge Family 85
Tussock 109
Sedum 175
Seed Box 228
Selaginella 52
Family 52
Selaginellaceae 52
Senecio 305
Senna, Wild 195
Sensitive Plant, Wild 195
Serapis 129
Sericocarpus 296
Service Berry 180
Setaria 83
Shad Bush 180
Sheepberry 281
Shepherd's Purse 169
Shin Leaf 238
Sickle-pod 174
Sicyos 283
Sida 217
Silene 156
Simarubaceae 206
Sinapis 169
Sisymbrium 170
Sisyrinchium 126
Sium 234
Skullcap, Hooded 256
Mad Dog 256
Smartweed 147
Water 148
Smilacina 122
Smilax 124
Snakeroot, Black 164

Button 287
Seneca 207
Virginia 145
White 287
Sneezeweed 303
Purple 303
Snowberry 280
Snow-on-the-Mountain 209
Soapwort 157
Solanaceae 263
Solanum 263
Solidago 287
altissima 290
arguta 289
aspera 290
bicolor 288
caesia 288
canadensis 290
flexicaulis 288
graminifolia 291
hispida 288
juncea 289
latifolia 288
neglecta 289
nemoralis 290
odora 289
patula 289
puberula 288
rigida 290
rugosa 289
sempervirens 289
serotina 290
speciosa 288
squarrosa 287
suaveolens 289
tenuifolia 291
ulmifolia 289
Solomon's Seal 123
Great 123
Small 123
Sonchus 308
Sorghastrum 85
Sorghum 85
Sorrel, Sheep 146
Sour Gum 237
Sow Thistle 309
Common 309
Spiny-leaved 309
Sparganiaceae 55
Sparganium 55
Spartina 74
Spatterdock 158
Spearmint 262
Spearwort, Water Plantain 159
Specularia 283
Speedwell, Common 271
Corn 271
Marsh 270
Thyme-leaved 271
Water 270
Spergularia 153
Sphenopholis 69
Spice Bush 166
Spider-flower 174
Spiderwort Family 116
Spikenard 231
False 122
Spindle Tree, European 213
Spiraea 179
Spiranthes 129
Spirodela 115
Spleenwort, Ebony 44
Sporobolus 73
Spring Beauty 157
Spurge, Cypress 210
Family 208
Flowering 209
Mole 210
Squaw Root 275
Stachys 258
Staff Tree Family... 212
Stagger-bush 240
Staphylea 213
Staphyleaceae 213
Starflower 244
Star Grass 125
Star-of-Bethlehem ... 122
Steeplebush 179
Steironema 244
Stellaria 154
Stenophragma 170
Stenophyllus 88
Stickseed 254
Stipa 74
Stonecrop 175
Ditch 175
Mossy 175
Wild 175
Stone Root 263
Storksbill 206
Strawberry 186
Barren 186
Bush 213
European Wood ... 186
Indian 186
Strophostyles 203
Stylosanthes 201
Sugarberry 142
Sumac 211
Dwarf 211
Poison 211
Staghorn 211
Sundew, Family 174
Round-leaved 174
Spatulate-leaved... 174
Sundrops, Common 230
Sunflower, Common 300
Swamp 300
Tickseed 302
Sweet Bay 164
Sweetbrier 192
Sweet Cicely 233
Sweet Clover 197
White 197
Yellow 197
Sweet Gale Family 135
Sweet Pepperbush... 238
Sweet William 157
Wild 252
Sycamore 178
Symphoricarpos 280
Symphytum 254
Symplocarpus 114
Syringa 245

Taenidia 235
Tanacetum 304
Tansy 304
Taraxacum 308
Taxaceae 53
Taxus 53
Tea, Mexican 149
New Jersey 215
Oswego 259
Teaberry 241
Tear-thumb, Arrow-leaved 149
Halberd-leaved ... 148
Teasel, Family 283
Wild 283
Tecoma 275
Tephrosia 198
Teucrium 255
Thalesia 275
Thalictrum 161
Thaspium 235
Thelypteris 45
Thistle, Bull 306
Canada 307
Common 306
Globe 306
Pasture 307
Russian 309
Sow 309
Star 307

Swamp 306
Thlaspi 168
Thorn, Cockspur 181
Thorough-wax 235
Thoroughwort 286
Thyme 261
Thymelaeaceae 227
Thymus 261
Tick-trefoil 199
Hoary 199
Showy 200
Smooth 199
Tilia 216
Tiliaceae 216
Tillaea 175
Timothy 72
Tissa 153
Toad-flax, Bastard 144
Tobacco, Indian 285
Tobacco, Ladies' ... 297
Tomanthera 273
Tomato 265
Toothwort 172, 173
Touch-me-not 215
Family 215
Pale 215
Spotted 215
Tradescantia 116
Tragopogon 308
Trailing Arbutus ... 241
Tree of Heaven 206
Triadenum 220
Trichostema 256
Tricuspis 66
Tridens 66
Trientalis 243
Trifolium 196
Trillium 124
Triodia 66
Triosteum 280
Triphora 129
Trisetum 69
Triticum 68
Trollius 163
Trumpet Creeper ... 275
Trumpet Flower 275
Tsuga 54
Tulip Tree 164
Tulipa 122
Tumble Weed 152
Turnip 170
Turtlehead 268
Tussilago 304
Twayblade 131
Twinleaf 165
Typha 55
Typhaceae 55
Ulmaria 188
Ulmus 141
Umbelliferae 232
Unicorn Plant 275
Unifolium 123
Uniola 66
Urtica 143
Urticaceae 141
Urticastrum 143
Utricularia 274
Uvularia 120
Vaccaria 157
Vaccinium 242
Vagnera 122
Valerian, Family ... 282
Greek 252
Valerianaceae 282
Valerianella 282
Vallisneria 59
Venus' Looking Glass 283
Veratrum 120
Verbascum 265
Verbena 255
Verbenaceae 255
Vernonia 285
Veronica 270
Veronicastrum 270
Vervain, Blue 255
Family 255
White 255
Vetch, Cow 202
Hairy 202
Winter 202
Viburnum 280
Maple-leaved 280
Vicia 201
Vinca 248
Vine Family 215
Viola, affinis 222
Angellae 223
blanda 225
blanda 225
Brittoniana 224
canadensis 226
conspersa 226
cucullata 222
domestica 223
emarginata 224
eriocarpa 225
fimbriatula 224
hirsutula 224
labradorica 226
lanceolata 224
Le Conteana 225
odorata 225
pallens 225
palmata 223
papilionacea 222
pedata 222
primulifolia 224
pubescens 225
Rafinesquii 227
rostrata 226
rotundifolia 225
sagittata 224
scabriuscula 225
septemloba 223
sororia 223
Stoneana 223
striata 226
tricolor 226
triloba 223
villosa 224
Violaceae 222
Violet, Bird-foot ... 222
Canada 226
Creamy 226
Dame's 170
Dog 226
Downy Yellow 225
Early Yellow 225
Family 222
Green 222
Hooded Blue 222
Lance-leaved 224
Long-spurred 226
Marsh Blue 222
Primrose-leaved ... 224
Round-leaved 224
Southern Wood ... 224
Sweet White 225
Virginia Creeper..... 215
Virginia Bower 163
Vitaceae 215
Vitis 215

Waahoo 212
Wake Robin 124
Waldsteinia 186
Walnut 136
Black 136
Family 136
White 136
Washingtonia 233
Water Hemp 152
Lily Family 158
Milfoil 231
Milfoil Family ... 231
Pepper 147

Pepper, Mild 148
Plantain 59
Plantain Family 58
Purslane 228
Shield 158
Starwort 210
Starwort Family 210
Willow 227
Waterleaf 253
Family 253
Water-weed 59
Waterwort 220
Family 220
Wheat 68
Cow 273
Whitlow Grass 168
Wild Potato Vine ... 251
Willow 131
Bay-leaved 131
Black 131
Crack 132
Dwarf Gray 133
Family 131
Glaucous 133
Goat 134
Prairie 133
Purple 134
Sand Bar 132
Shining 132
Silky 133
Water 227
Weeping 132
White 132
Willow Herb 228
Great 228
Wineberry 189
Winterberry 212
Smooth 212
Wintergreen 239
Flowering 207
Spotted 238
Witch-hazel 178
Family 178
Withe-rod 281
Wolffia 115
Wood Sorrel 204
Creeping Yellow 205
Family 204
Violet 204
Yellow 204
Woodsia 48
Woodwardia 44
Wormwood, Roman 298, 304
Woundwort 259

Xanthium 298
Xolisma 241
Xyridaceae 116
Xyris 116

Yam Family 125
Yam Root, Wild ... 125
Yarrow, Common ... 303
Yellow-eyed Grass... 116
Family 116
Yellow Rocket 172
Yew, American 53
Family 53

Zannichellia 57
Zanthoxylum 206
Zizania 75
Zizia 235